Digitized by Microsoft®

Cornell University Library

FROM THE

UNITED STATES GOVERNMENT

THROUGH THE

SUPERINTENDENT OF DOCUMENTS

A.282532 23/III/14

§ 506 Rev. Stat. prohibits the withdrawal of this book for home use.

9730

CORNELL UNIVERSITY LIBRARY
3 1924 070 698 398

Cornell University Library

The original of this book is in
the Cornell University Library.

There are no known copyright restrictions in
the United States on the use of the text.

http://www.archive.org/details/cu31924070698398

DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

E. DANA DURAND, DIRECTOR
APPOINTED JUNE 16, 1909; RESIGNED JUNE 30, 1913

WM. J. HARRIS, DIRECTOR
APPOINTED JULY 1, 1913

THIRTEENTH CENSUS OF THE UNITED STATES TAKEN IN THE YEAR 1910

VOLUME XI

MINES AND QUARRIES

1909

GENERAL REPORT AND ANALYSIS

PREPARED UNDER THE SUPERVISION OF ISAAC A. HOURWICH
EXPERT SPECIAL AGENT IN CHARGE OF MINING

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

S

[illegible]

A.282531

DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS

WASHINGTON

ANNOUNCEMENT CONCERNING THIRTEENTH CENSUS REPORTS.

DECEMBER 3, 1913.

Of the final census reports listed on page 3, all have been issued with the exception of Volume IV, Occupation Statistics, which will be completed at an early date.

The volumes numbered I to XI, constituting the complete reports of the census, are being issued in a very limited edition, intended chiefly for libraries, institutions, and special students of statistics.

A condensed report, entitled Abstract of the Census, has been printed in a much larger edition, intended for more general distribution, and prepared in such a way as to meet the need of most persons desiring information concerning the results of the census. It contains in tabular form all important census statistics for the United States as a whole and for each state and principal city, together with a brief text explaining the figures and their meaning. The Abstract therefore is a condensation of the complete census reports, both tables and text, and not merely a compilation of tables.

The Abstract is issued in special editions for each of the several states, each edition containing a supplement giving the detailed statistics for counties, cities, and other civil divisions of the state to which it relates, designed to meet the needs of persons resident in that state or especially interested in it. The supplement contains also both tables and text.

As a compact reference work of general and local interest the Abstract is more convenient for most persons than the voluminous final reports.

92752°—13

REPORTS OF THE THIRTEENTH CENSUS.

POPULATION:

Volume I.—General Report and Analysis.
Volume II.—Reports by States, with Statistics for Counties, Cities, and other Civil Divisions—Alabama to Montana.
Volume III.—Reports by States, with Statistics for Counties, Cities, and other Civil Divisions—Nebraska to Wyoming; Alaska, Hawaii, and Porto Rico.
Volume IV.—Occupation Statistics.

AGRICULTURE:

Volume V.—General Report and Analysis.
Volume VI.—Reports by States, with Statistics for Counties—Alabama to Montana.
Volume VII.—Reports by States, with Statistics for Counties—Nebraska to Wyoming; Alaska, Hawaii, and Porto Rico.

MANUFACTURES:

Volume VIII.—General Report and Analysis.
Volume IX.—Reports by States, with Statistics for Principal Cities.
Volume X.—Reports for Principal Industries.

MINING:

Volume XI.—Mines and Quarries.

ABSTRACT OF THE THIRTEENTH CENSUS.

CONTENTS.

SUMMARY OF CHAPTERS.

Page.
- I.—Introduction and General Explanations ... 13
- II.—Summary and Analysis of Results ... 21
- III.—Statistics of Mines and Quarries, by States ... 41
- IV.—Coal ... 181
- V.—Iron ... 235
- VI.—Petroleum and Natural Gas ... 261

CONTENTS OF CHAPTERS.

Chapter I.—INTRODUCTION AND GENERAL EXPLANATIONS.

Page.
- Provisions of law ... 13
- Cooperation with the United States Geological Survey ... 13
- Method of collecting statistics ... 14
- Territory covered ... 15
- Industries and establishments canvassed ... 15
- Relation between statistics of mines and quarries and statistics of manufactures ... 15
- Period covered ... 17
- Number of operators ... 17
- Number of mines, quarries, and wells ... 18
- Capital ... 18
- Land tenure ... 18
- Expenses of operation and development ... 18
- Supplies and materials ... 18
- Miscellaneous expenses ... 19
- Value of products ... 19

Chapter II.—SUMMARY AND ANALYSIS OF RESULTS.

- Continental United States and noncontiguous territory: 1909. 21
- Producing and nonproducing mines ... 21
- Geographic distribution of producing enterprises ... 22
- Principal mining industries ... 24
- General comparison for the United States: 1902–1909 ... 24
- Geographic distribution of the principal industries: 1909 ... 26
- Persons engaged in mining industries ... 28
  - Distribution by sex and age ... 28
  - Distribution by industrial status ... 28
  - Proprietors performing manual labor ... 29
  - Wage earners by occupations ... 29
  - Contract work ... 30
  - Number of persons employed, by months ... 30
  - Prevailing hours of labor ... 31
- Land tenure ... 32
- Form of organization ... 32
  - Number of stockholders ... 33
- Scale of production ... 34
  - Classification according to number of wage earners ... 34
  - Classification according to value of products ... 36
- Expenses ... 36
- Power ... 37
- Enterprises operated by governmental and eleemosynary institutions ... 37

DIAGRAMS.

- Value of products, mining industries: 1909 ... 23
- Value of products, mining industries, by states: 1902 and 1909. 23
- Percentage distribution, by divisions: 1909 ... 23
- Value of products, mining industries: 1902 and 1909 ... 25
- Percentage distribution, by industries: 1909 ... 25
- Value of products, leading industries, by states: 1909 ... 26

Chapter III.—STATISTICS OF MINES AND QUARRIES BY STATES.

Page.
- Alabama ... 41
- Alaska ... 44
- Arizona ... 47
- Arkansas ... 50
- California ... 53
- Colorado ... 58
- Connecticut ... 62
- Delaware ... 65
- Florida ... 66
- Georgia ... 68
- Idaho ... 71
- Illinois ... 74
- Indiana ... 77
- Iowa ... 80
- Kansas ... 83
- Kentucky ... 86
- Louisiana ... 89
- Maine ... 91
- Maryland ... 93
- Massachusetts ... 96
- Michigan ... 99
- Minnesota ... 102
- Missouri ... 105
- Montana ... 109

Page.
- Nebraska ... 112
- Nevada ... 113
- New Hampshire ... 116
- New Jersey ... 118
- New Mexico ... 121
- New York ... 124
- North Carolina ... 128
- North Dakota ... 131
- Ohio ... 132
- Oklahoma ... 135
- Oregon ... 138
- Pennsylvania ... 141
- Rhode Island ... 146
- South Carolina ... 147
- South Dakota ... 149
- Tennessee ... 152
- Texas ... 155
- Utah ... 158
- Vermont ... 162
- Virginia ... 165
- Washington ... 168
- West Virginia ... 171
- Wisconsin ... 174
- Wyoming ... 177

Chapter IV.—COAL.

- Introduction ... 181
- Definitions and explanations ... 181
  - Scope of census ... 181
  - Period covered ... 181
  - Coal mining and coke manufacture at the mines ... 181
  - Number of operators ... 181
  - Coal land controlled ... 181
  - Capital ... 181
  - Expenses ... 181
    - Salaries ... 182
    - Administrative expenses of general offices ... 182
    - Wages ... 182
    - Supplies ... 182
    - Miscellaneous expenses ... 182
  - Use of long and short tons ... 182
  - Value of products ... 182
  - Persons engaged in the industry ... 182
  - Primary horsepower ... 182

Part I.—The Industry as a Whole.

- General summary for the United States ... 183
- Geographical distribution of coal mining ... 184
  - Producing fields of the United States ... 184
  - Production by geographic divisions and leading states ... 184
  - Statistics of coal mining by geologic regions ... 184

Chapter IV.—COAL—Continued.

Part I.—The Industry as a Whole—Continued.

Page.

- Map showing coal mining fields in the United States: 1909 185
- Progress of the coal mining industry 186
  - Production by geographic divisions and leading states: 1909, 1902, and 1889 186
  - Production by geologic regions: 1909 and 1889 187
  - Statistics for the United States: 1909 and 1889 188
  - Population and coal production: 1849–1909 189
  - Statistics of engines and power: 1909 and 1902 189
- Character of organization 190
  - General summary 190
  - Statement for incorporated and unincorporated operators 190
- Industrial affiliations of operators 191
- Scale of production 192
  - Size of mines 192
  - Classification of operators according to value of products 192
  - Classification of operators according to the number of wage earners employed 193
  - Classification of operators according to acreage controlled 193
- Distribution of expenses 194
- Persons engaged in the industry 194
  - Occupational status 194
  - Classification of wage earners according to occupation 195
  - Wage earners employed, by months and hours of labor 196
- Power 197

Part II.—Pennsylvania Anthracite Coal.

- Introduction 198
  - Location of the anthracite deposits 198
  - Methods of production 198
  - Number of collieries 198
- General summary 198
- Progress of the industry 199
- Railway affiliation of operators 199
- Scale of production 200
  - Classification of operators according to value of products 200
  - Classification of operators according to number of wage earners employed 200
  - Classification of operators according to coal land acreage 200
- Expenses 201
  - Distribution of expenses for all collieries 201
  - Expenses and related data for mines and washeries 201
  - Royalty payments 202
- Wage earners 202
  - Employment of wage earners above and below ground for different classes of collieries 202
  - Number of days collieries were operated 203
- Map showing anthracite fields of Pennsylvania 203

Part III.—Bituminous Coal.

- General summary 204
  - Statistics for mines with and without coke manufacture 204
  - Map showing relative production, by states 205
  - Coal mining exclusive of coke manufacture at the mines 206
  - Statistics of different kinds of bituminous coal 206
- Progress of the industry 207
  - Comparative statistics, by states: 1909 and 1889 207
- Statistics of land held by operators 209
  - Extent of holdings 209
  - Production according to tenure of land, by states 210
  - Statistics of holdings, by states: 1909 and 1889 210
- Mines classified according to the relation of total expenses to value of products 211
- Methods of mine operation 212
  - Pick and machine mining 212
  - Kind of mine opening 213
- Disposition of coal 214
- Statistics of commercial and of local operators 215

Chapter IV.—COAL—Continued.

Part III.—Bituminous Coal—Continued.

Page.

- Statistics of operators classified according to their industrial affiliation 216
- Scale of production 216
  - Size of mines 216
  - Classification of operators according to value of products 217
  - Classification of operators according to acreage controlled 218
- Expenses 218
  - Average expenses per ton of coal, by states 218
  - Expenses for selected mines, by states 219
  - Expenses and related data for mines classified according to method of mining, selected states 219
  - Expenses and related data for mines classified according to kind of opening, selected states 221
  - Royalty payments, by states 222
- Persons engaged in the industry 222
  - Classification according to general occupational status 222
  - Classification of wage earners according to occupation 223
  - Maximum and minimum numbers of wage earners reported, by states 223
  - Hours of labor, by states 224
- Power 225
  - Mines operated with and without mechanical power, by states 225
  - Comparative statistics of power, by states: 1909 and 1902 225

Part IV.—General Statistics: 1909.

- Introduction 227
- General statistics, by states: 1909 228

Chapter V.—IRON.

- Introduction 235
- Definitions and explanations 235
  - Scope of census 235
  - Period covered 235
  - Number of operators 235
  - Capital 235
  - Expenses 235
    - Salaries and wages 235
    - Supplies and materials 235
    - Miscellaneous expenses 235
  - Value of products 235
  - Persons engaged in the industry 235
  - Primary horsepower 235
- General summary: 1909 236
  - Producing mines—General summary, by districts 236
  - Producing and nonproducing enterprises 237
- Progress of the industry 237
  - Summary for producing mines in the United States: 1879–1909 237
  - Comparison of ore production and pig-iron production, by five-year periods: 1890–1909 239
  - Annual production of iron ore, by states: 1879–1909 239
  - Diagram 1.—Production of iron ore—United States and principal producing regions: 1890–1909 239
  - Diagram 2.—Production of iron ore, by principal states: 1909, 1899, 1889, and 1879 240
  - Diagram 3.—Per cent of production of iron ore, by states: 1909 240
  - Average expenses per ton, by states: 1879–1909 241
  - Comparative summary for producing mines, by districts and states: 1909 and 1902 241
  - Comparative summary for nonproducing mines: 1909 and 1902 243
- Land tenure, royalties, and taxes 244
  - Land tenure—Summary for the United States 244
  - Land tenure, by states 244
  - Concentration of control 244
  - Royalties 245
  - Taxes 245

Chapter V.—IRON—Continued.

Page.
- Persons engaged in the industry ... 246
  - Salaried employees ... 246
  - Wage earners, by age and occupation: 1909 ... 246
  - Wage earners employed, by months ... 246
  - Days in operation ... 247
  - Prevailing hours of labor ... 247
- Production and consumption of ore ... 248
  - Summary for the United States: 1909 ... 248
  - Comparison with the report of the United States Geological Survey ... 248
  - Disposition of ore ... 249
  - Value of ore disposed of in different ways, with average values ... 249
  - Haulage, freight, commissions, and storage ... 250
  - Consumption of domestic ore compared with production ... 251
  - Affiliation of mines with blast furnaces ... 251
  - Consumption of domestic and foreign ore ... 252
- Scale of production ... 252
  - Classification of operators according to the number of wage earners employed ... 252
  - Classification of operators according to value of products ... 253
  - Mines operated by proprietors who perform manual labor ... 253
- Character of organization ... 254
  - Comparative summary for the United States: 1909 and 1902 ... 254
  - General summary, by states: 1909 ... 254
  - Land tenure, by character of organization ... 255
- Methods of mining ... 256
  - Open-pit and underground mines ... 256
  - Use of machinery in mining ... 256
  - Mines using steam shovels ... 257
  - Mines without mechanical power ... 257
- General table ... 257
  - Detailed statistics of iron mines, by districts and states: 1909 ... 258

Chapter VI.—PETROLEUM AND NATURAL GAS.

- Introduction ... 261
- Arrangement of report ... 261
- Definitions and explanations ... 261
  - Scope of census ... 261
  - Period covered ... 261
  - Number of operators ... 261
  - Persons engaged in the industry ... 261
  - Oil and gas land controlled ... 261
  - Capital ... 261
  - Expenses ... 261
    - Salaries ... 261
    - Administrative expenses of general offices ... 261
    - Wages ... 262
    - Supplies ... 262
    - Miscellaneous expenses ... 262
  - Primary horsepower ... 262

Part I.—The Industry as a Whole.

- General summary for the United States ... 263
  - Summary for producing and nonproducing enterprises: 1909 ... 263
  - Comparative summary: 1909 and 1902 ... 264
  - Summary for producing enterprises, classified by principal product: 1909 ... 265
- Geographical distribution ... 266
  - Summary, by fields: 1909 ... 268
  - Well record, by fields and states: 1909 ... 268
- Persons engaged in the industry ... 269
  - Occupational status ... 269
    - Salaried employees ... 270
    - Wage earners ... 270

Chapter VI.—PETROLEUM AND NATURAL GAS—Continued.

Part I.—The Industry as a Whole—Continued.

Page.
- Persons engaged in the industry—Continued.
  - Kind of labor used ... 270
  - Wage earners employed, by months ... 271
- Character of organization ... 272
  - Classification of operators by character of organization ... 272
- Land tenure ... 273
  - Acreage and form of tenure ... 273
  - Land holdings by character of organization ... 274
  - Concentration of control ... 275
- Scale of production ... 275
  - Classification of operators according to value of products ... 275
  - Classification of operators according to the number of wage earners employed ... 277
- Mechanical power ... 278

Part II.—Petroleum.

- Production of petroleum ... 279
- Diagram—Production of petroleum, by fields: 1909 ... 279
- Character of organization ... 281
  - General summary ... 281
  - Detailed summary for incorporated and unincorporated operators ... 281
- Scale of production ... 286
  - Classification of operators according to value of products ... 286
  - Classification of operators according to the number of wage earners employed ... 286

Part III.—Natural Gas.

- Production and consumption of natural gas ... 287
- Diagram.—Production of natural gas: 1909 ... 287
  - Number of gas consumers ... 289
  - Gasoline ... 289
- Character of organization ... 289
  - General summary ... 289
  - Detailed summary for incorporated and unincorporated operators ... 290
  - Cooperative associations in Indiana ... 290
- Scale of production ... 291
  - Classification of operators according to value of products ... 291
  - Classification of operators according to the number of wage earners employed ... 291

Part IV.—Supplementary Statistics for Petroleum Wells and Gas Wells.

- General summary ... 293
- Kind of labor used ... 294
  - Petroleum ... 294
  - Natural gas ... 298
- Royalties ... 298
  - Petroleum ... 298
  - Natural gas ... 299
- Depth of wells ... 299

Part V.—General Statistics.

- Table 48.—Summary for operators, classified according to principal product: 1909 ... 301
- Table 49.—Petroleum and natural gas—Detailed statistics of producing enterprises, by character of operations, by fields and states: 1909 ... 303
- Table 50.—Petroleum—Detailed statistics of enterprises, by character of operations, by fields and states: 1909 ... 307
- Table 51.—Natural gas—Detailed statistics of enterprises, by character of operations and by states: 1909 ... 310
- Table 52.—Detailed statistics of nonproducing enterprises, by states: 1909 ... 313

GENERAL TABLES.

Page.
Table 1.—Producing mines, quarries, and wells—Comparative summary for the United States, by industries: 1909 and 1902 ... 317
Table 2.—Producing mines, quarries, and wells—Comparative summary for the United States, by states: 1909 and 1902 ... 318
Table 3.—All mines, quarries, and wells—Land controlled, capital, expenses, number of persons engaged in industries, and power for the United States, by industries: 1909 ... 320
Table 4.—All mines, quarries, and wells—Land controlled, capital, expenses, number of persons engaged in mining industries, and power for the United States, by states: 1909 ... 326
Table 5.—Number of wage earners employed each month in producing and nonproducing enterprises, by industries: 1909 ... 331
Table 6.—Number of wage earners employed each month in producing and nonproducing enterprises, by states: 1909 ... 332
Table 7.—Producing mines, quarries, and wells—Land controlled, capital, expenses, value of products, number of persons engaged in mining industries, and power, for the United States, by industries: 1909 ... 334
Table 8.—Producing mines, quarries, and wells—Capital, expenses, value of products, number of persons engaged in mining industries, land controlled, and power, for United States, by states: 1909 ... 336
Table 9.—Nonproducing mines, quarries, and wells—Number of persons engaged in mining industries, land controlled, power, capital, and expenses: 1909 ... 338
Table 10.—Nonproducing mines, quarries, and wells—Capital, expenses, number of persons engaged in mining industries, land controlled, and power, by states: 1909 ... 340
Table 11.—Number of enterprises in each state, by industries: 1909 ... 342

APPENDICES.

Page.
Appendix A.—Schedules ... 351
Appendix B.—Instructions to special agents ... 355
Appendix C.—Instructions for editing and revising the schedules for mines, quarries, and wells ... 366

LETTER OF TRANSMITTAL.

DEPARTMENT OF COMMERCE,
BUREAU OF THE CENSUS,
Washington, D. C., December 3, 1913.

SIR:

I have the honor to transmit herewith Volume XI of the Reports of the Thirteenth Decennial Census, relating to mines and quarries.

The statistics relate to the year ended December 31, 1909. The field work was done for the most part by clerks detailed from the permanent force of the bureau and by special agents appointed expressly for the purpose. The compilation of the statistics and the preparation of the text for this report have been under the supervision of Isaac A. Hourwich, expert special agent for mining, in accordance with plans prepared by my predecessor, Hon. E. Dana Durand. The textual discussion for the special report on coal was prepared by John D. A. Morrow, special agent. When I assumed charge of the office I found that it was contemplated to include in the report on Mines and Quarries separate monographs on 15 of the leading industries. It, however, was impossible to carry out this scheme of presentation and publish the report at a reasonably early date, therefore these special monographs were abandoned, with the exception of those relating to anthracite and bituminous coal, iron ore, petroleum and natural gas. The volume, however, summarizes the statistics in considerable detail for all of the minerals in the United States and for the minerals in each state and territory.

Respectfully,

Wm J. Harris
Director.

Hon. WILLIAM C. REDFIELD,
Secretary of Commerce.

GENERAL REPORT AND ANALYSIS

CHAPTER I.

INTRODUCTION AND GENERAL EXPLANATIONS.

All of the statistics of the Thirteenth Census of mines and quarries are presented in this volume. It contains (1) a general presentation and analysis of the statistics; (2) a presentation of the principal statistics of mines and quarries for the individual states; (3) special reports on certain of the leading mining industries, viz, anthracite and bituminous coal mining, iron mining, and the petroleum and natural gas industry; and (4) eleven general tables which are designed to bring together the more important data in convenient form. These tables are as follows:

Table 1 compares the results of the census of 1909 with those of the special census of mines and quarries of 1902, by industries. It shows for each year the amount expended for salaries and wages, supplies and materials, royalties and rent of mines, and contract work; the value of products; and the primary horsepower used. It also shows the percentage of increase in the amounts paid for salaries and wages, royalties and rent of mines, value of products, and primary horsepower.

Table 2 presents for each state the same data that are shown for the individual industries in Table 1.

Table 3 presents for the United States as a whole, including both producing and nonproducing enterprises, detailed statistics as to capital, expenses of operation and development, persons engaged in mining industries, land controlled, and primary horsepower, by industries.

Table 4 presents similar statistics by states.

Table 5 shows the number of wage earners employed in all enterprises on the 15th day of each month, by industries.

Table 6 presents the same information by states.

Table 7 presents for producing mines, quarries, and wells in the United States as a whole detailed statistics as to capital, expenses of operation and development, value of products, persons engaged in mining industries, land controlled, and primary horsepower, by industries.

Table 8 presents the same information by states.

Tables 9 and 10 present detailed statistics for nonproducing enterprises by industries and states, respectively.

Table 11 shows the number of enterprises in each industry, by states.

Provisions of law.—Those portions of the "Act to provide for the Thirteenth and subsequent decennial censuses," approved July 2, 1909, which refer particularly to the census of mines and quarries are as follows:

> The schedule of inquiries relating to * * * mines and quarries shall include the name and location of each establishment; character of organization, whether individual, cooperative, or other form; amount of capital actually invested; number of proprietors, firm members, copartners, stockholders, and officers and the amount of their salaries; number of employees and the amount of their wages; quantity and cost of materials used in mining; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed.
>
> The census of * * * mines and quarries shall relate to the year ending December thirty-first next preceding the enumeration of population and shall be confined to * * * mines and quarries which were in active operation during all or a portion of that year.
>
> Whenever he shall deem it expedient, the Director of the Census may charge the collection of these statistics upon special agents or upon detailed employees, to be employed without respect to locality.
>
> The form and subdivision of inquiries necessary to secure the information under the foregoing topics shall be determined by the Director of the Census.
>
> And it shall be the duty of every owner, president, treasurer, secretary, director, or other officer or agent of any * * * mining or other establishment of productive industry, whether conducted as a corporation, firm, limited liability company, or by private individuals, when requested by the Director of the Census or by any supervisor, enumerator, special agent, or other employee of the Census Office acting under the instructions of the said Director, to answer completely and correctly to the best of his knowledge all questions on any census schedule applying to such establishment; and any owner, president, secretary, director, or other officer or agent of any * * * mining establishment, or other establishment of productive industry, who under the conditions hereinbefore stated shall refuse or willfully neglect to answer any of these questions, or shall willfully give answers that are false, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding ten thousand dollars, or imprisoned for a period not exceeding one year, or both so fined and imprisoned, at the discretion of the court. * * *
>
> That the information furnished under the provisions of the next preceding section shall be used only for the statistical purposes for which it is supplied. No publication shall be made by the Census Office whereby the data furnished by any particular establishment can be identified, nor shall the Director of the Census permit anyone other than the sworn employees of the Census Office to examine the individual reports.

Cooperation with the Geological Survey.—The statistics of mines and quarries at the Thirteenth Census were collected by the Bureau of the Census in cooperation with the United States Geological Survey, which collects annual statistics of mineral production. The plan of cooperation was embodied in the following agreement between the Bureau of the Census and the United States Geological Survey, approved by the Departments of Commerce and Labor and of the Interior:

CENSUS OF MINES AND QUARRIES.

AGREEMENT FOR COOPERATIVE WORK BETWEEN THE BUREAU OF THE CENSUS AND THE GEOLOGICAL SURVEY.

The act of Congress approved July 2, 1909, making provision for the Thirteenth and subsequent censuses, directs that a census of * * * mines and quarries of the United States shall be taken by the Director of the Census in the year 1910 and every ten years thereafter.

The Geological Survey collects annual statistics of mines, quarries, and mineral products, and for the census year its work will, to some extent, duplicate that of the census. Recognizing the necessity of uniformity in the compilation of the statistics, the elimination of duplicate work, and cooperation as far as possible in the collection of the data required by the two bureaus, the Director of the Census and the Director of the Geological Survey have made this agreement.

(1) The Geological Survey, because of the annual statistical canvass made by it, has in its possession as complete lists of the mineral producers as it is possible to maintain. The lists of names and addresses of all mines and quarries, corrected to the latest date possible, will be furnished to the Bureau of the Census.

(2) The schedules for some sections of the country may be sent to the producers by mail, and the envelopes for such mailing will be addressed at the Bureau of the Census.

(3) The census schedules will be printed so as to include the inquiries relative to the statistics of production required by the Geological Survey, but the portion containing the inquiries in regard to production shall be detachable from the main census schedule. In cases where the Geological Survey requires the value of the product marketed and the Bureau of the Census the value of the product mined arrangements will be made to have both values reported on the schedule.

(4) The letter transmitting the schedules is to be over the joint signatures of the Director of the Census and the Director of the Geological Survey.

(5) The schedules will be returned to the Bureau of the Census, it being understood that some one of responsibility will be employed through whose hands all such schedules will pass and who will see that the portion carrying information relative to production will be detached and transmitted to the Geological Survey for tabulation. Prior to separating the schedules the value of product will be transferred to the census schedule.

(6) If it is decided by the two bureaus that it is better to have all the schedules of mines and quarries collected by enumerators or special agents, it is understood that such enumerators or special agents will be instructed to secure the statistics of production for the Geological Survey with as much care as is exercised in obtaining the information required by the Bureau of the Census. The work of the census field men will not be considered completed until all the information called for by the schedules is obtained. The schedules will be transmitted by the enumerators or special agents to the Bureau of the Census and the same procedure followed as if the returns were made by producers through the mails.

(7) In advance of the actual canvass the two bureaus will agree upon the number of employees who will be engaged in the field. When practicable, these employees will collect the statistics for both manufacturing and mining industries in their respective districts. All of them will act under the supervision of the Bureau of the Census, and the traveling expenses and subsistence of the Survey representatives, when employed in the field on this work, will be paid by the Bureau of the Census. The special agents who will be employed in the western states will be instructed to confer with the representatives of the Survey in charge of its offices at Denver, Colo.; Salt Lake City, Utah; and San Francisco, Cal.

(8) As some of the mineral products reported to the Geological Survey will not be included in the census of mines and quarries, it will be impossible to make the totals of mineral production, as reported by the two bureaus, agree, and no attempt will be made to do so. But the statistics containing details in regard to production will in every instance be tabulated by the Geological Survey and will be transmitted to the Bureau of the Census as soon as completed, and the Bureau of the Census will include these statistics, so far as may be desirable, in its report on mines and quarries.

(9) The period to be covered by the two bureaus will be the calendar year 1909, although reports from operators whose fiscal year differs from the calendar year will be accepted, such fiscal year being the one terminating nearest to December 31, 1909.

In pursuance of this agreement two separate schedules were provided for each mining enterprise: (1) A general schedule for all mines and quarries; (2) a supplemental schedule for each of the principal classes of minerals.

The general schedule for mines and quarries followed substantially the form adopted for the census of manufactures. The additional inquiries on the general schedule for mines and quarries related to the following subjects: The acreage and form of tenure of mineral and other lands (Inquiry 3); the classification of wage earners (Inquiry 5); and development work (Inquiry 10).

The supplemental schedules contained inquiries in relation to quantity and value of products and subjects of a technical nature. These schedules were prepared by the Bureau of the Census in cooperation with the United States Geological Survey and followed substantially the forms used by the Survey in the collection of its annual statistics, with some additions and modifications intended to bring the data into harmony with the general schedule.

The object of the census was to ascertain for each operator or enterprise the value of products, the capital invested, the expenses of operation and development, and the number of persons engaged. The annual statistics of the United States Geological Survey are concerned only with the total quantity and value of each product for each geographic division and state. Where the same mining enterprise produces more than one mineral, the total value of products for that enterprise represents a combination of the values of different minerals, whereas for the purpose of the United States Geological Survey it is essential that the value of each mineral be presented separately. On the other hand, in some instances where the product of a mining enterprise undergoes a process of dressing or reduction before reaching the consumer, the statistics of the United States Geological Survey present the final value of the marketable product, whereas the census statistics present the value of the crude product at the mine or quarry. The schedules used by the United States Geological Survey for the collection of its annual statistics were accordingly adjusted to meet the requirements of both bureaus.

Method of collecting statistics.—The canvass of mines and quarries for the Thirteenth Census was made by special agents appointed especially to collect statistics of manufactures and of mines and quarries; a number of clerks from the permanent force of the Bureau of the Census were also detailed to instruct the temporary special agents and to assist in the canvass. In a few sparsely settled districts, in which the enterprises were difficult of access, the statistics of mines and quarries were collected by enumerators employed for the census of population and agriculture. Whereas at the special census of mines and quarries in 1902 the field force was under the direction of the United States Geological Survey, at the Thirteenth Census the canvass of mines and quarries was made under the direct supervision of the Bureau of the Census. The fact that the mining census of 1909 was conducted simultaneously with the census of manufactures and population enabled the Bureau of the Census to make a more complete canvass of mines, quarries, and petroleum and gas wells than at the special census of mines and quarries for 1902. For example, at the Thirteenth Census the canvass of placer mines (surface gold mines) secured reports from individual operators for 95 per cent of the total production of that industry, whereas at the preceding special census only 62 per cent of the total value of products was covered by reports from individual operators. Similarly, the present canvass of the lead and zinc producing district, comprising the states of Missouri, Kansas, and Oklahoma, secured reports from individual operators covering 98 per cent of the total production for 1909, whereas at the preceding special census only 49 per cent of the total production for Kansas and 86 per cent of the total production for Missouri were covered by reports from individual operators.

A number of the schedules originally received from field agents and enumerators were, upon examination at the Bureau, found to be defective. Such schedules were returned to them for correction. Errors discovered after the completion of the field work were corrected by correspondence with mine operators. After these corrections, there still remained 423 defective schedules which could not be corrected by correspondence, nearly all of these schedules being received from small enterprises. These reports, representing 1.8 per cent of the total number secured, were accordingly omitted from the general tabulation. Some of the enterprises covered by these schedules, however, furnished complete supplemental schedules, giving the quantity and value of products. These schedules were used by the United States Geological Survey in the compilation of its statistics of the quantity and value of minerals produced.

Territory covered.—The census of mines and quarries, taken in connection with the Thirteenth Census, covered the United States proper, also Alaska, Hawaii, and Porto Rico. This census was the first at which a canvass of mines and quarries was undertaken in Alaska. Reports were secured by agents of the Bureau for enterprises in Alaska, most of which were engaged in gold mining. Notwithstanding the difficulties of the canvass in that sparsely settled territory, with a floating mining population, the reports from individual operators of placer mines covered 78 per cent of the total production of placer gold in Alaska, as estimated by the Director of the Mint, in cooperation with the United States Geological Survey.

Industries and establishments canvassed.—The Thirteenth Census covered all classes of mines, quarries, and petroleum and gas wells that were in operation during any portion of the year 1909. This was the first census at which a general canvass of operators of petroleum and natural gas wells was made by census agents. At the special census of mines and quarries for 1902, the Standard Oil Company supplied most of the information secured regarding this industry—seven schedules from the Standard Oil Company covered 95 per cent of the petroleum wells reported for the United States. The total number of operators from whom complete reports were secured at the present census was 7,793.

The canvass of mines and quarries and petroleum and natural gas wells at the Thirteenth Census covered both producing enterprises and those whose operations were confined to development work. Mines, quarries, or wells that were idle during the entire year 1909 were omitted from the canvass. The following operations were likewise omitted from the canvass: Prospecting, the digging or dredging of sand and gravel for the construction of roads and for building operations, the production of mineral waters, and the operation of small bituminous coal banks producing less than 1,000 tons annually. Where the mineral products are not marketed in their crude condition but are dressed or washed at the mine or quarry, the statistics of mining cover the entire work of obtaining the crude material and its preparation for the market. In compiling the statistics for the natural gas industry the Bureau of the Census used only the reports of producing companies, whereas the United States Geological Survey included in its statistics the reports of distributing companies which purchased their natural gas from producing companies.

Relation between statistics of mines and quarries and of manufactures.—The census of the mining and quarrying industries, including the petroleum and natural gas industries, which are, for convenience, spoken of as mining industries, was taken coincidently with the census of manufactures for 1909. The Twelfth Census did not include an enumeration of mines and quarries, but such an enumeration was made for the year 1902.

In some cases it is impossible to make a sharp distinction between mining and quarrying operations, on the one hand, and manufacturing operations on the other. Both are frequently conducted by the same concern. Strictly speaking, mining and quarrying operations cease as soon as substances have been removed from the earth, and all processes thereafter performed on those substances are in the nature of manufacturing. To attempt to make this distinction rigidly in every case in the census statistics, however, would involve a very large amount of estimate, and would, moreover, go contrary to the ordinary conceptions of the operators of mines and quarries as to the scope of the mining and quarrying business. The crude products of mines and quarries, after they leave the ground, are almost always subjected to a certain amount of manipulation at the mine or quarry itself. They have to be crushed, separated, washed, burned, calcined, concentrated, cut, polished, or otherwise modified before they are regarded as marketable commodities. Even coal is often broken up and sorted according to size at the mines. All such work is theoretically in the nature of manufacture, but when of a simple character it is not ordinarily considered as manufacture by those in the industry. Consequently, in those cases where the quasi-manufacturing processes applied to the crude products at the mine or quarry are of a very simple character, the business as a whole is treated as pertaining to the mining and quarrying industry, and no part of the statistics relating to it is segregated for inclusion with the returns for manufactures.

On the other hand, in many cases there are applied to materials at the mine or the quarry manufacturing processes of a character so elaborate that it is most desirable to take them into consideration in the census of manufactures. This desirability is particularly great in those instances where the same kinds of manufacturing processes are in certain cases conducted at the mine or quarry and in other cases by establishments distant from the mines or quarries and not operated under the same ownership. For example, there are many concerns which operate copper mines and in immediate conjunction therewith operate smelters for handling copper ore, sometimes keeping only a single set of books for both branches, while at the same time there are other copper smelters distant from mines and under separate ownership. If the census statistics of manufactures are to cover the copper-smelting industry completely, it is obviously necessary to include data relating to those smelters which are operated in immediate conjunction with mines.

The policy actually pursued by the Census Bureau at the Thirteenth Census with respect to industries on the border line between mining and manufacturing has been as follows:

(1) In the case of most of those industries in which there were establishments which conducted both mining or quarrying operations and manufacturing operations of a more or less elaborate character, the data for each such establishment, as a whole, have been included in the census statistics of mines and quarries and also in the census statistics of manufactures.

(2) In the case of the coal and coke industry and the copper industry, however, if an establishment conducted at the same time mining and manufacturing operations, the data for both have been included in the statistics for mines and quarries, but in connection with the statistics of manufactures only data relating to the manufacturing branch have been included; if separate accounts were not kept, by means of which accurate data could be reported, as sometimes was the case, an estimated segregation has been made. The statistics of coke manufacture and of copper smelting contained in the reports for manufactures thus relate only to the manufacturing branch of the business. In cases where they are conducted at the mines the cost of materials as presented in the statistics for manufactures includes a value, sometimes more or less arbitrary, assigned to the coal or ore as produced by the mine. On the other hand, in the mining statistics the value of the product for bituminous coal mines and copper mines having coke ovens or smelters includes the value of the finished product of the ovens or smelters, duplication being avoided by assigning no value to the coal or ore. In a few cases a similar policy has been pursued with respect to establishments in other industries.

(3) On the other hand, in the case of a few industries simple and inexpensive mining or quarrying operations are conducted in connection with a business in which much the greater part of the activities are of a manufacturing character. These are treated only in the statistics for manufactures. This is the case with the brick and tile, cement, lime, and pottery industries.

The reason why the Census Bureau thus adopted a different policy in the case of some border-line industries from that adopted in the case of others was one of practical convenience. In the case of most industries in which the manufacturing operations are conducted in conjunction with mining and quarrying, the two branches are so intimately associated that a segregation of the statistics could be made only on the basis of the roughest kind of estimates. In the case of the bituminous coal and copper mines operating, respectively, coke ovens and smelters, however, the two branches of business are usually much more sharply divided, and many of the establishments were able to furnish for the two separately either accurate statistics or estimates approaching closely to accuracy. In the case of industries of the third group, again, the operations of manufacturing and of mining or quarrying are so intimately associated that segregation would be almost impossible, and in view of the minor importance of the mining or quarrying operations it seemed best to include the data only in the statistics for manufactures.

The following table shows, for 1909, the principal items of the statistics of mines and quarries as contained in the present volume, side by side with the corresponding items relating to manufactures as published in the volume dealing with that subject, together with figures showing the numbers or amounts which have been included both in the statistics for mines and quarries and in those for manufactures.

Table 1

	Statistics of manufactures.	Statistics of mines and quarries.	Amounts included in statistics for both manufactures and mines and quarries.
Employees	7,405,313	1,109,410	77,169
Salaried employees	790,267	44,127	3,973
Wage earners	[1] 6,615,046	[2] 1,065,283	73,196
Capital	$18,428,269,706	$3,380,525,841	$199,368,976
Expenses:			
Services	4,365,612,851	640,167,630	43,716,537
Salaries	938,574,967	53,393,551	4,842,929
Wages	3,427,037,884	586,774,079	38,873,608
Materials	12,142,790,878	247,866,304	34,645,922
Miscellaneous	[3] 1,945,685,870	[3] 154,608,759	7,859,109
Value of products	20,672,051,870	1,238,410,322	216,347,593

[1] Average number.

[2] Number December 15, or nearest representative day.

[3] Includes royalties and amount paid for contract work.

It should be clearly understood that in the case of the statistics of materials and of value of products the figures in the last column of this table by no means represent the full magnitude of the duplication of data for mines and quarries in the data for manufactures. Almost the entire product of mining and quarrying industries is used as raw material in manufacturing industries, and the value of products of the former largely appears as cost of materials for the latter. To add together the value of products of manufacturing industries and the value of products of mines and quarries, as shown in the table, would give a total having no real significance, and it is of course equally beside the point to add together the figures for cost of materials for the two great branches of industry.

The figures as to duplication of cost of materials and value of products given in the last column of the table represent merely the sum of those items which have been directly, as such, counted twice, once in the statistics for manufactures and once in those for mines and quarries. For example, the case may be taken of an establishment engaged in quarrying stone and making grindstones at the quarry, the total value of whose product in the form in which it leaves the establishment is $10,000. This $10,000 would appear in the value of products of manufacturing industries and also in the value of products of mines and quarries, and would consequently enter into the total shown as duplication in the third column of the table. On the other hand, if a quarrying establishment produced stone valued at $5,000 and sold it to a manufacturing establishment which converted it into grindstones worth, say, $10,000, no duplication would be shown in the third column of the table, but it is obvious that the actual value of the final product of the two establishments would be $10,000 and not $15,000, which would be the sum of the values actually entering into the statistics.

On the other hand, in the case of the items covered by the table other than cost of materials and value of products, there is some significance in adding the figures for manufactures to those for mines and quarries and deducting the duplication shown in the third column of the table. By this method it appears that the number of employees in mining and quarrying and in manufacturing industries combined in 1909 was 8,437,554, of which number 830,421 were salaried employees and 7,607,133 were wage earners. The total expenditure of the two groups of industries for salaries amounted to $987,125,589, the total for wages to $3,974,938,355, and the total for miscellaneous expenses to $2,092,435,520.

The following table names the mining industries in which there were in 1909 establishments all or part of the statistics for which were included with the statistics for manufactures as well as with those for mines and quarries, and shows for each the amount of direct duplication in the number of wage earners and the value of products.

Table 2

INDUSTRY.	TOTALS APPEARING IN STATISTICS OF MINES AND QUARRIES.		NUMBERS OR AMOUNTS DIRECTLY DUPLICATED IN STATISTICS OF MANUFACTURES.	
	Wage earners.	Value of products.	Wage earners.	Value of products.
Total	**744,602**	**$679,161,696**	**73,196**	**$216,347,593**
Bluestone	2,175	1,588,406	945	839,942
Coal, bituminous	569,789	427,962,464	26,878	67,666,042
Copper	53,143	134,616,987	6,596	107,426,714
Feldspar	325	271,437	65	89,569
Fuller's earth	345	315,762	56	58,234
Granite	20,561	18,997,976	12,314	12,234,451
Graphite	404	344,130	35	29,983
Gypsum	3,778	5,812,810	2,697	4,823,871
Lead and zinc	21,603	31,363,094	659	4,444,500
Limestone	37,695	29,832,492	3,660	3,955,672
Marble	6,313	6,239,120	4,448	4,110,020
Peat	182	109,047	72	40,280
Quartz	184	231,025	76	90,560
Sandstone	9,908	7,702,423	3,000	2,461,713
Slate	9,438	6,054,174	9,380	6,025,399
Talc and soapstone	1,336	1,174,516	1,247	1,082,974
Traprock	6,280	5,578,317	289	271,407
All other industries [1]	1,163	967,416	779	696,262

[1] Includes "barytes," "grindstones," "mineral pigments," "scythestones," "tripoli," and "whetstones."

Period covered.—The returns relate to the calendar year 1909, or the business year which corresponded most nearly to that calendar year. The statistics cover a year's operations, except for enterprises which began or discontinued business during the year.

Number of operators.—As a rule, the unit of enumeration was the "operator." Every individual, firm, or corporation was required to report all mines, quarries, or wells which were operated by them. Where several mines, quarries, or wells managed separately were owned by the same operator, it was optional with the operator to furnish one report for all his operations, or a separate report for each of his properties. Separate reports were obtained for all properties operated in different states, even where they were owned by the same operator. Likewise, where the operations of one individual, firm, or corporation covered more than one class of mines and quarries, such as coal, iron, limestone, etc., a separate report was received for each industry. The total number of operators, accordingly, as shown by the original returns, included a small smount of duplication. As far as practicable, all duplications of this character within the same industry were eliminated by the consolidation of the reports for the same operator. All such duplications have been eliminated for the coal, petroleum and natural gas, iron, and copper industries.

Number of mines, quarries, and wells.—Under this designation are given the total number of mines and quarries in operation or in the course of development at any time during the calendar year 1909, or the business year that corresponded most nearly to that calendar year, and the number of completed petroleum and natural gas wells in operation on December 31, 1909.

In most mining and quarrying industries the number of mines or quarries varies but little from the number of operators, the principal variations being found in the mining of anthracite coal, iron, and copper, with an average of more than two mines per operator; in the mining of tungsten, with an average of more than five mines per operator; and in the quarrying of gypsum, with an average of nearly three quarries per operator. In the production of petroleum and natural gas, on the other hand, there was an average of more than 20 wells to one operator.

Capital.—The census schedule required every operator to state the total amount of capital invested in the enterprise on the last day of the business year reported, as shown by his books. There is, however, a great diversity in the methods of bookkeeping in use by different operators. As a result, the statistics for capital lack uniformity. Some of the reported figures apparently represent capital stock at face value; others include large investments in mineral lands which are not at present being actively mined, but are held in reserve; still others may include expenditures for unproductive mining ventures in no way related to the operations carried on during the census year.

For the reasons stated, schedules in which the inquiry in relation to capital remained unanswered, notwithstanding every effort made to secure the information required, were included in the general tabulation.

Land tenure.—The Thirteenth Census was the first to extend the inquiry relating to land tenure to all branches of the mining industry. At the Eleventh Census this inquiry was confined to coal lands. At the special census of mines and quarries for 1902, the inquiry was confined to precious-metal mines. The annual statistics of the United States Geological Survey for 1909 included an inquiry in relation to the acreage and form of tenure of oil and gas lands. This inquiry was extended by the Bureau of the Census to all mines, quarries, and petroleum and natural gas wells. A special inquiry for that purpose was inserted in the general schedule for mines and quarries. This inquiry, however, was omitted from the general schedule for petroleum and natural gas wells, being included in the supplemental schedule calling for information intended for use by both bureaus. The inquiry was in all cases confined to land connected with the enterprise for which reports were returned. In many instances land held in reserve by mine operators for future development was evidently included in their returns, although not under operation in 1909. In some of the quarrying industries the acreage of the entire farm on which the quarry was located was sometimes reported.

A small percentage of the schedules contained no answers to the inquiries relating to land tenure. In view of the character of the statistics relating to this subject, such schedules, when otherwise satisfactory, were included in the general tabulation.

Expenses of operation and development.—The expenses reported for producing mines include the cost both of operation and of development work which was done in connection with operation.

A certain amount of development work is incidental to the operation of every mine. The general mining schedule inquired for the total amount which had been expended during the year 1909 for development work, this amount being included in the expenses reported for services, materials and supplies, and miscellaneous objects. Where an enterprise reported no production, the total expenses reported represented development work only. The figures reported for development work by producing enterprises, however, showed a lack of uniformity. Many mine operators kept no separate accounts for development work and the figures reported by them were mere estimates of doubtful accuracy; where such accounts were kept there was considerable variety in the system of charging specific items of expense to development work or operating expenses. As the totals of these heterogeneous figures would be meaningless, they have not been used in the present report.

Supplies and materials.—This item includes the cost of lumber and timber used for repairs, mine supports, track ties, etc.; iron and steel for blacksmithing; rails, frogs, sleepers, etc., for tracks and repairs; renewals of tools and machinery and materials for repairs; and supplies, explosives, oil, etc., as well as the cost of fuel and the rent of power. The schedule called only for the cost of such supplies and materials as had been used during the year covered by the report. Accurate figures, however, could be furnished only in those cases where the operators kept an account of supplies and materials used, or had an inventory made of all in stock at the beginning and at the end of the year. Such a system of accounting is far from general among mine operators, and there is reason to believe that in many cases the reported cost of supplies and materials covered all purchased during the year rather than those used during the year. The crude product of some operators was purchased by others for further dressing or refining or was resold in the form in which purchased; the cost of such materials is shown in a separate column in the general tables for producing mines, but in all other tables it is included in the general item of cost of supplies and materials.

Miscellaneous expenses.—In the general tables royalties and the rent of mines, taxes, and the amounts paid for contract work are shown in separate columns. All other expenses not enumerated separately are combined under the head of "Rent of offices and other sundry expenses," which includes rent of offices and buildings other than at the mine, quarry, or well, use of patents, insurance, ordinary repairs of buildings and machinery (not including materials therefor where carried in separate accounts), advertising, damages, traveling expenses, and all other sundry expenses.

Value of products.—The value of products for 1909 in most cases represents the value of the products marketed during that year, not the value of those mined during that year. In this respect the data differ from those usually obtained for manufacturing establishments. In order to ascertain the value of the products mined during the year 1909, account would have had to be taken of the inventories at the beginning and at the close of the year. In many mining industries, however, no such inventories are made, by reason of the purely speculative value of the crude product lying on the dump.

Another element of inaccuracy inherent in the statistics as to the value of products is due to the combination of mining with manufacturing. Most of the product of iron mines is not sold as ore, but is used in blast furnaces operated by the owners of the mines. A large proportion of the output of coal is likewise used in iron and steel works operated by the owners of the coal mines, while a considerable proportion also is controlled by railway companies and other industrial concerns which own the coal mines, either directly, or indirectly through subsidiary companies. In such cases the reported value of the mining product is often a mere item of bookkeeping which may or may not reflect the actual market value of the product.

The total value of products for some industries includes a certain amount of duplication, due to the fact that the crude product of some operators was used as material by others whose mines or quarries were equipped with dressing or refining plants; the total value of products for the industry, accordingly, includes both the crude product and the refined product made from it. In order to eliminate this duplication and to obtain the approximate value of products for each industry, the cost of such materials, which is shown in a separate column in the general tables for producing mines, should be subtracted from the total value of products for the industry. There is, however, a certain degree of inaccuracy involved in such a computation, because the purchaser of the crude product usually figures freight as a part of the cost of his materials, whereas the value reported by the producer represents the selling value at the mine.

Statistics of the value of each mineral product were obtained by the Bureau of the Census in cooperation with the United States Geological Survey, but the two bureaus follow different methods in presenting these statistics. The Geological Survey shows separately the value of each mineral product, whereas the Bureau of the Census presents the value of products of each mining industry, which often includes the value of some products not covered by the industry designation. The crude product of metalliferous mines, for example, may include varying combinations of metals, such as gold, silver, copper, lead, zinc, and iron. Similarly, the total value of all products of the granite quarries is not identical with the value of the total output of granite, but may include the value of some marble or other stone quarried in connection with the principal product.

Another cause contributing to the difference in the reports of the two bureaus was the fact that in some instances the agent, in securing the reports of enterprises finishing the product at the quarry before marketing, returned two schedules for each enterprise. In one schedule were reported the estimated cost of quarrying and the value of the rough stone, and in the other the estimated cost of manufacturing the rough product into the form in which it was marketed and the value of the finished product were reported. In such cases the two schedules were combined and used by the Bureau of the Census in its report on mines and quarries, while the Geological Survey used only the schedule relating to quarrying proper: Again, in some instances reports could be secured only for the value of the products and not for the other data called for by the census schedule; these reports have been excluded from the general tables of this report, but were included by the Survey. Quarries operated by penal and elemosynary institutions were included by the Geological Survey but omitted from the general tables by the Bureau of the Census. In some instances the Bureau of the Census, being unable to obtain the financial data called for by the schedule except for some period other than the twelve months ending December 31, 1909, has taken the product for the business year of the enterprise reporting, while in the Survey report the product for each enterprise is for the year ending December 31, 1909. In addition to the foregoing differences in method which apply to all industries, certain differences existed in particular industries, but were not common to all. Thus, in the limestone industry, the figures published by the Geological Survey exclude all limestone used at cement plants, while the Bureau of the Census includes such limestone. For metalliferous mines other than iron mines, the Survey gives the value of the metal recovered by the refineries which the ore ultimately reaches, while the Bureau of the Census presents data relating only to the products sold by mine operators. In the sandstone industry the Bureau of the Census includes under sandstone the sand produced by crushing the stone at the quarry, while the Geological Survey includes this sand under sand and gravel. In the bluestone industry the figures used by the Survey were secured from the dealers, while the Census Bureau used figures secured from the producers. In the natural gas industry the Bureau of the Census used only the reports of producing companies, whereas the United States Geological Survey included in its statistics the reports of distributing companies which purchased their natural gas from producing companies.

The following table shows the value of products as shown by the general tables of this report and as published by the Geological Survey in its report "Mineral Resources of the United States: 1909," and the differences existing in the two reports. In the column showing the differences the plus and minus signs indicate the amount which the census figures exceed or are less than those published by the Survey.

Table 3

INDUSTRY.	Report of Census.	Report of Geological Survey.	Difference.
Fuels:			
Coal, anthracite	$149,180,471	$149,415,847	−$235,376
Coal, bituminous	[1] 401,577,477	405,486,777	−3,909,300
Petroleum and natural gas	185,416,684	191,455,724	−6,039,040
Peat	109,047	127,042	−17,995
Metals:			
Iron	106,947,082	110,290,596	−3,343,514
Copper	134,616,987	142,083,711	−7,466,724
Precious metals	94,123,180	108,503,889	−14,380,709
Lead and zinc	31,363,094	(2)	....
Quicksilver	868,458	888,710	−20,252
Manganese	20,435	19,675	+760
Tungsten	563,457	614,370	−50,913
Structural materials:			
Limestone	29,832,492	32,070,401	−2,237,909
Granite	18,997,976	19,581,597	−583,621
Sandstone	7,702,423	6,564,052	+1,138,371
Marble	6,239,120	6,548,905	−309,785
Slate	6,054,174	5,441,418	+612,756
Traprock	5,578,317	5,133,842	+444,475
Bluestone	1,588,406	1,446,402	+142,004
Miscellaneous:			
Asbestos	65,140	62,603	+2,537
Asphaltum and bituminous rock	466,461	2,138,273	−1,671,812
Barytes	224,766	198,561	+26,205
Bauxite	670,829	679,447	−8,618
Miscellaneous—Continued.			
Buhrstones and millstones	$34,441	$35,393	−$952
Clay	2,945,948	3,449,707	−503,759
Corundum and emery	18,185	18,185	....
Feldspar	271,437	401,788	−130,351
Fluorspar	288,509	291,747	−3,238
Fuller's earth	315,762	301,604	+14,158
Garnet	101,920	102,315	−395
Graphite	344,130	345,509	−1,379
Grindstones	413,296	804,051	−390,755
Gypsum	5,812,810	5,906,738	−93,928
Infusorial earth and tripoli	142,060	122,348	+19,712
Magnesite	68,463	37,860	+30,603
Marl	13,307	45,053	−31,746
Mica	206,794	280,529	−73,735
Mineral pigments	151,015	613,133	−462,118
Monazite and zircon	64,472	65,282	−810
Oilstones, scythestones, and whetstones	206,028	214,019	−7,991
Phosphate rock	10,781,192	10,772,120	+9,072
Precious stones	315,464	534,380	−218,916
Pumice	30,097	33,439	−3,342
Pyrite	676,984	1,028,157	−351,173
Quartz	231,025	249,466	−18,441
Sulphur	4,432,066	4,432,066	....
Talc and soapstone	1,174,516	1,221,959	−47,443

---

[1] Exclusive of the value of coke produced from coal.

[2] Value of lead and zinc not published by Geological Survey.

CHAPTER II.

SUMMARY AND ANALYSIS OF RESULTS

Continental United States and noncontiguous territory: 1909.—Table 1 gives for 1909 the principal statistics collected by the Bureau of the Census for all mines and quarries and petroleum and gas wells within the area of enumeration. In addition to continental United States this area included in 1909 Alaska, Hawaii, and Porto Rico. The figures here given include nonproducing as well as producing mines and constitute the most general summary of the results of the investigation.

Table 1	NUMBER OR AMOUNT: 1909				
	Total.	Continental United States.	Alaska.	Hawaii.	Porto Rico.
Number of operators	24,355	23,664	673	4	14
Number of mines and quarries	27,260	27,240		6	14
Number of petroleum and gas wells	166,448	166,448			
Persons engaged in mining industries, Dec. 15, 1909	1,175,188	1,166,948	8,025	45	170
Proprietors and firm members, total	35,208	33,691	1,501	2	14
Number performing manual labor in connection with mines, quarries, and wells	10,740	10,299	441		
Salaried employees	46,694	46,475	219		
Wage earners	1,093,286	1,086,782	6,305	43	156
Primary horsepower	4,722,479	4,699,910	22,347	197	25
Capital	$3,710,356,533	$3,662,527,064	$47,749,164	$45,700	$34,605
Expenses of operation and development	1,087,437,081	1,074,191,429	13,220,200	19,760	5,692
Services	662,422,226	655,584,467	6,819,850	14,058	3,851
Salaries	56,286,988	55,878,478	408,510		
Wages	606,135,238	599,705,989	6,411,340	14,058	3,851
Supplies and materials	263,019,615	260,110,898	2,902,956	5,371	390
Royalties and rent of mines	65,683,384	64,154,926	1,527,995	206	257
Contract work	32,335,580	30,690,458	1,645,063		59
Miscellaneous	63,976,276	63,650,680	324,336	125	1,135
Value of products	1,255,370,163	1,238,410,322	16,933,427	20,955	5,459

Of the total number of persons engaged in mining industries in the area covered by the preceding table, only a little more than one-half of 1 per cent were in Alaska, while the mining operations in Hawaii and Porto Rico were insignificant.

Owing to the fact that a certain number of mines in continental United States and Alaska were engaged in development work only, during the census year, the figure for value of products in 1909, $1,255,370,163, relates to a smaller number of enterprises than the figures for persons engaged in the industries, expenses, etc.

While Alaska, Hawaii, and Porto Rico reported some mineral products in 1909, as shown by the above table, the discussion of mining operations in this chapter is confined to the data reported for continental United States (referred to simply as the United States).

Producing and nonproducing mines.—In some aspects of the statistics of mining industries the distinction between producing and nonproducing mines is important. So far as it is possible to bring the figures in regard to production into relation with the various factors of operation, particularly the number of employees and the expenses of operation, it is necessary to confine comparisons to the producing mines. Table 2 gives comparative figures for producing and nonproducing mines in the United States.

Table 2	All enterprises.	Producing enterprises.	NONPRODUCING ENTERPRISES.	
			Number or amount.	Per cent of total.
Number of operators	23,664	19,915	3,749	15.8
Number of mines and quarries	27,240	18,164	9,076	33.3
Number of wells	166,448	166,320	128	(1)
Persons engaged in mining industry	1,166,948	1,139,332	27,616	2.4
Proprietors and firm members, total	33,691	29,922	3,769	11.2
Number performing manual labor	9,937	8,861	1,076	10.8
Salaried employees	46,475	44,127	2,348	5.1
Wage earners	1,086,782	1,065,283	21,499	2.0
Primary horsepower	4,699,910	4,608,253	91,657	2.0
Capital	$3,662,527,064	$3,380,525,841	$282,001,223	7.7
Expenses of operation and development	1,074,191,429	1,042,642,693	31,548,736	2.9
Services	655,584,467	640,167,630	15,416,837	2.4
Salaries	55,878,478	53,393,551	2,484,927	4.4
Wages	599,705,989	586,774,079	12,931,910	2.2
Supplies and materials	260,110,898	247,866,304	12,244,594	4.7
Royalties and rent of mines	64,154,926	63,973,585	181,341	0.3
Contract work	30,690,458	28,887,898	1,802,560	5.9
Miscellaneous	63,650,680	61,747,276	1,903,404	3.0
Value of products	1,238,410,322	1,238,410,322		

[1] Less than one-tenth of 1 per cent.

Perhaps the most satisfactory index of the relative importance of the two classes of mines shown in the preceding table is the number of wage earners and the amount of primary power, the figures for nonproducing mines representing exactly 2 per cent of the total in each instance. The average number of wage earners per operator for the nonproducing mines is 6 and for the producing mines 53.

Additional details in regard to nonproducing mines are given in Tables 9 and 10 (pp. 339 and 340), which present separate figures for most of the different mining industries. The further discussion in this chapter of the statistics for 1909 will deal primarily with the producing mines, with only incidental reference to the nonproducing enterprises.

There were reported in all mining industries in the United States in 1909, as shown by the previous table, 19,915 operators of producing mines, who employed 1,065,283 wage earners and reported products valued at $1,238,410,322.

Geographic distribution of producing enterprises.—The distribution of the mining industries by geographic divisions and states is shown in Table 3, which gives the number of wage earners employed and the value of products for each division and state, with the percentage which such number or value forms of the total.

Table 3 PRODUCING ENTERPRISES: 1909

DIVISION AND STATE.	Number of operators.	Number of mines and quarries.	Number of wells.	Wage earners (Dec. 15, or nearest representative day).		Value of products.	
				Number.	Per cent of total.	Amount.	Per cent of total.
United States	19,915	18,164	166,320	1,065,283	100.0	$1,238,410,322	100.0
GEOGRAPHIC DIVS.:							
New England	510	586	....	18,254	1.7	17,327,242	1.4
Middle Atlantic	6,333	3,903	71,122	402,937	37.8	370,742,262	30.0
East North Central	4,152	2,662	56,379	213,660	20.1	237,534,170	19.2
West North Central	2,300	2,603	3,450	88,458	8.3	130,252,538	10.5
South Atlantic	1,358	1,652	15,146	118,006	11.1	105,714,462	8.5
East South Central	830	1,109	1,110	70,856	6.7	49,143,289	3.9
West South Central	1,229	452	14,700	28,252	2.6	47,530,937	3.8
Mountain	1,972	3,728	97	93,072	8.7	205,053,900	16.6
Pacific	1,538	1,610	4,316	31,788	3.0	75,111,522	6.1
NEW ENGLAND:							
Maine	97	102	....	2,471	0.2	2,056,063	0.2
New Hampshire	45	53	....	1,520	0.1	1,308,597	0.1
Vermont	137	182	....	8,388	0.8	8,221,323	0.7
Massachusetts	139	147	....	3,508	0.3	3,467,888	0.3
Rhode Island	21	27	....	677	0.1	897,606	(1)
Connecticut	71	75	....	1,690	0.2	1,375,765	0.1
MIDDLE ATLANTIC:							
New York	1,351	752	11,342	11,303	1.1	13,334,975	1.1
New Jersey	131	151	....	6,801	0.6	8,347,501	0.7
Pennsylvania	4,851	3,000	59,780	384,833	36.1	349,059,786	28.2
E. NORTH CENTRAL:							
Ohio	1,876	964	35,067	57,185	5.4	63,767,112	5.1
Indiana	1,010	480	10,373	27,559	2.6	21,934,201	1.8
Illinois	915	759	10,918	82,436	7.7	76,658,974	6.2
Michigan	83	173	21	40,397	3.8	67,714,479	5.5
Wisconsin	268	286	....	6,083	0.6	7,459,404	0.6
W. NORTH CENTRAL:							
Minnesota	153	250	....	18,114	1.7	58,664,852	4.7
Iowa	373	431	....	19,010	1.8	13,877,781	1.1
Missouri	1,021	1,224	39	29,676	2.8	31,667,525	2.5
North Dakota	53	53	6	860	0.1	564,812	(1)
South Dakota	39	43	3	3,866	0.4	6,432,417	0.5
W. NORTH CENTRAL—Continued.							
Nebraska	18	20	....	491	(1)	$322,517	(1)
Kansas	643	582	3,402	16,441	1.5	18,722,634	1.5
SOUTH ATLANTIC:[2]							
Delaware	9	9	....	628	(1)	516,213	(1)
Maryland	126	173	....	7,745	0.7	5,782,045	0.5
Virginia	150	244	....	16,893	1.6	8,795,646	0.7
West Virginia	798	718	15,146	78,404	7.4	76,287,889	6.2
North Carolina	118	130	....	2,825	0.3	1,358,617	0.1
South Carolina	29	32	....	2,014	0.2	1,252,792	0.1
Georgia	92	109	....	4,014	0.4	2,874,595	0.2
Florida	36	96	....	5,483	0.5	8,846,665	0.7
E. SOUTH CENTRAL:[2]							
Kentucky	437	442	1,109	22,033	2.1	12,100,075	0.9
Tennessee	216	365	1	18,028	1.7	12,692,547	1.0
Alabama	177	302	....	30,795	2.9	24,350,667	2.0
W. SOUTH CENTRAL:							
Arkansas	96	146	62	6,422	0.6	4,603,845	0.3
Louisiana	33	2	246	953	0.1	6,547,050	0.5
Oklahoma	864	212	12,113	13,920	1.3	25,637,892	2.1
Texas	236	92	2,279	6,957	0.6	10,742,150	0.9
MOUNTAIN:							
Montana	373	543	....	20,503	1.9	54,991,961	4.4
Idaho	174	370	....	3,592	0.3	8,649,342	0.7
Wyoming	66	95	21	8,499	0.8	10,572,188	0.9
Colorado	672	1,575	76	24,769	2.4	45,680,135	3.7
New Mexico	98	285	....	5,682	0.5	5,587,744	0.4
Arizona	135	251	....	13,451	1.3	34,217,651	2.8
Utah	188	235	....	11,004	1.0	22,083,282	1.8
Nevada	266	374	....	5,572	0.5	23,271,597	1.9
PACIFIC:							
Washington	93	170	....	7,343	0.7	10,537,556	0.9
Oregon	116	161	....	1,087	0.1	1,191,512	0.1
California	1,329	1,279	4,316	23,358	2.2	63,382,454	5.1

[1] Less than one-tenth of 1 per cent.

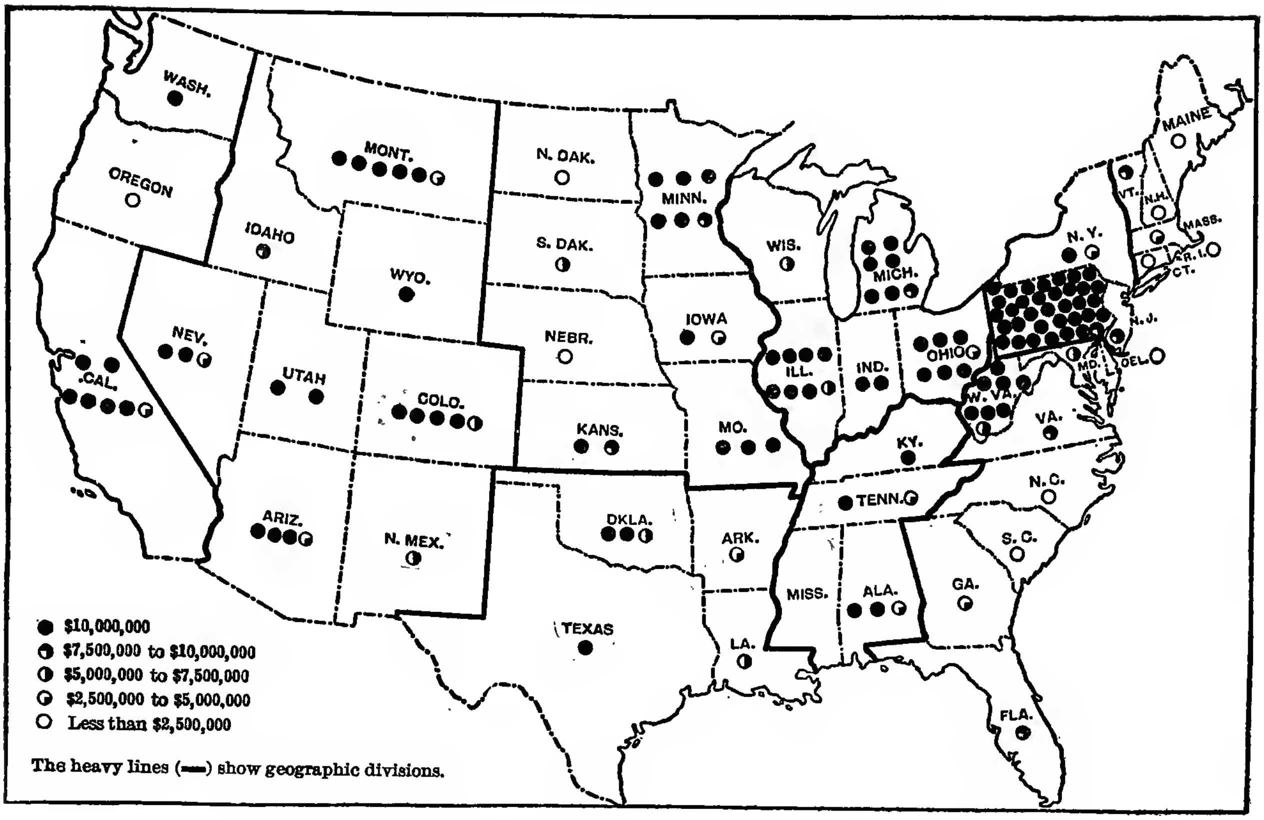
[2] No mineral production in District of Columbia or Mississippi.

Whether the importance of the mining industry be measured by the value of its products or by the number of wage earners employed, the Middle Atlantic division easily ranks first among the several geographic divisions, the value of its mineral products in 1909 amounting to $371,000,000, or 30 per cent of the total for the United States. Next in order was the East North Central division, with products valued at $238,000,000, or about one-fifth of the total. The mineral products of these two divisions consist largely of coal. Other divisions with a considerable mineral production are the Mountain, West North Central, and South Atlantic.

The prominence of the Middle Atlantic division in mineral production is due almost wholly to the state of Pennsylvania, which, with products (mainly coal) valued at nearly $350,000,000 in 1909, reported more than one-fourth of the value of all mineral products in the United States. No other state approaches it in importance. Illinois and West Virginia, which rank next in importance, each had products valued at a little more than $76,000,000, or less than one-fourth the value shown for Pennsylvania. Other states where the value of mineral products exceeded $50,000,000 are Michigan, Ohio, California, Minnesota, and Montana. The eight states named reported in 1909, 65.4 per cent of the value of all mineral products for the United States.

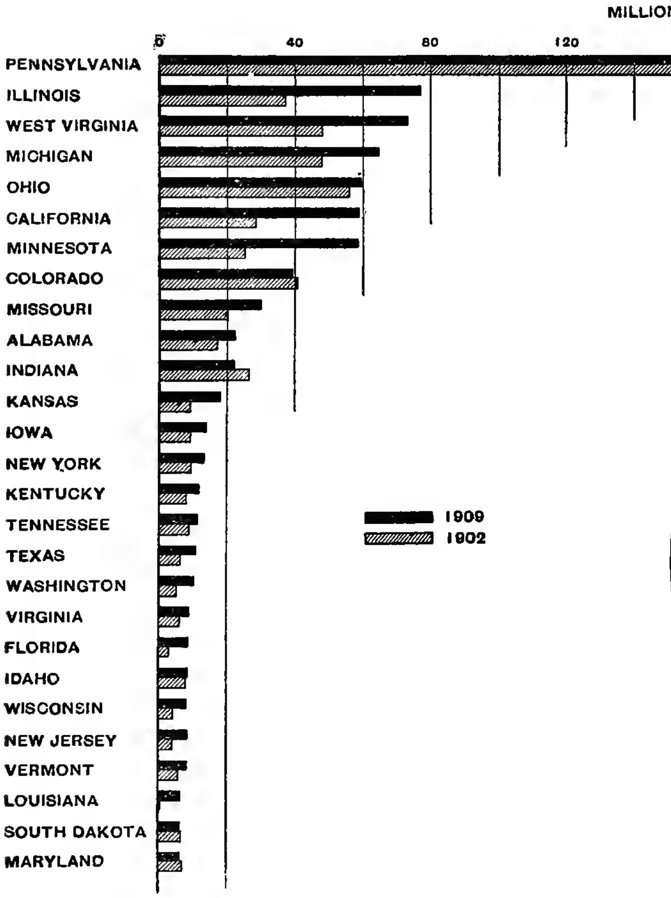
There are several states in which the mineral production is quite insignificant. In the District of Columbia and Mississippi no mineral production was reported. Rhode Island, North Dakota, Nebraska, and Delaware each contributed less than one-tenth of 1 per cent of the whole value of mineral products, while the contribution of Maine, New Hampshire, Massachusetts, Connecticut, North Carolina, South

VALUE OF PRODUCTS, MINING INDUSTRIES: 1909.



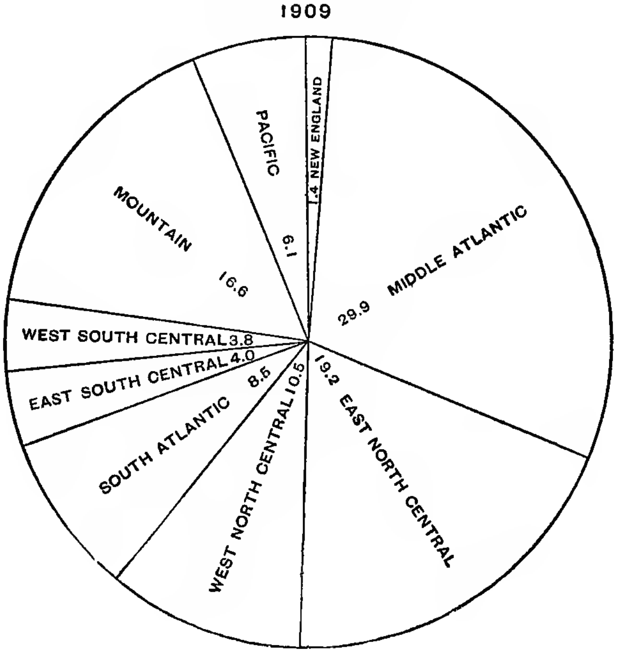
VALUE OF PRODUCTS, MINING INDUSTRIES, BY STATES: 1902 AND 1909.

(Based on Table 2, p. 318.)



PERCENTAGE DISTRIBUTION, BY DIVISIONS.

(Based on Table 8, p. 336.)



Carolina, Georgia, Arkansas, New Mexico, and Oregon was less than one-half of 1 per cent in each case.

The distribution of the wage earners employed in producing mines among the divisions and states follows approximately the distribution of the total value of products. Where coal is the chief mineral product, however, the number of wage earners is relatively greater than elsewhere. The Middle Atlantic division reported a considerably greater percentage of all wage earners in the producing mines of the country than of the total value of mineral products. In less marked degree the same statement holds true of the East South Central, South Atlantic, East North Central, and New England divisions, while each of the remaining divisions reported a larger percentage of the total value of products than of the total number of wage earners. Pennsylvania employed 36.1 per cent of all the wage earners, Illinois 7.7 per cent, and West Virginia 7.4 per cent, these three leading coal states together reporting more than one-half of all the wage earners employed in mining industries.

Principal mining industries.—Table 4 shows the relative importance of the principal mining industries in 1909.

Table 4 INDUSTRY.	PRODUCING ENTERPRISES: 1909				
	Number of operators.	Wage earners (Dec. 15, or nearest representative day).		Value of products.	
		Number.	Per cent of total.	Amount.	Per cent of total.
All industries	19,915	1,065,283	100.0	$1,238,410,322	100.0
Coal	3,695	743,293	69.8	577,142,935	46.6
Anthracite	192	173,504	16.3	149,180,471	12.0
Bituminous	3,503	569,789	53.5	427,962,464	34.6
Petroleum and natural gas	7,793	39,831	3.7	185,416,684	15.0
Metals:					
Copper	161	53,143	5.0	134,616,987	10.9
Iron	176	52,230	4.9	106,947,082	8.6
Precious metals	2,282	37,815	3.6	94,123,180	7.6
Deep mines	1,604	33,616	3.2	83,885,928	6.8
Placer mines	678	4,199	0.4	10,237,252	0.8
Lead and zinc	977	21,603	2.0	31,363,094	2.5
Structural materials	3,988	92,350	8.7	75,992,908	6.1
Limestone	1,665	37,695	3.5	29,832,492	2.4
Granite	707	20,561	1.9	18,997,976	1.5
Sandstone	595	9,908	0.9	7,702,423	0.6
Marble	77	6,313	0.6	6,239,120	0.5
Slate	185	9,438	0.9	6,054,174	0.5
Traprock	196	6,260	0.6	5,578,317	0.5
Bluestone	563	2,175	0.2	1,588,406	0.1
Miscellaneous:					
Phosphate rock	51	8,186	0.8	10,781,192	0.9
Gypsum	78	3,778	0.4	5,812,810	0.5
Sulphur	4	408	(1)	4,432,066	0.4
Clay	261	3,871	0.4	2,945,948	0.2
All other	449	8,775	0.8	8,835,436	0.7

[1] Less than one-tenth of 1 per cent.

The foregoing table presents statistics for 9 industries which in 1909 had products exceeding $10,000,000 in value. These 9 industries employed 95.2 per cent of all the wage earners engaged in producing enterprises and contributed 96 per cent of the total value of the products of mining industries. Statistics are also given in the table for 8 other mining industries having products between $1,500,000 and $10,000,000 in value. The 17 industries shown separately in the table employed over 99 per cent of the wage earners engaged in productive enterprises and contributed more than 99 per cent of the total value of products of mining industries.

Coal mining far outranks any other industry in importance. In 1909 it furnished occupation to more than two-thirds of all the wage earners employed by producing mines, quarries, and wells, and contributed only a little less than one-half of the total value of products reported. Of the total value of coal produced, the anthracite mines furnished approximately one-fourth and the bituminous mines three-fourths. Another fuel industry—the production of petroleum and natural gas—ranks second in importance in value of products, but employs comparatively few wage earners.

Of the metals, copper and iron outrank the precious metals both in the value of the product mined and in the number of wage earners, but lead and zinc fall considerably below the precious metals in both respects.

General comparison for the United States: 1902–1909.—Table 5 on the next page gives statistics regarding expenses, value of products, and mechanical power for producing mines, quarries, and petroleum and gas wells in the United States for 1909 and 1902, together with the percentages of increase.

The figures in this table for 1909 vary slightly from those shown in preceding tables by reason of the differences between the present census and that of 1902 in the classification of mining industries. There are many industries on the border line between mining and manufacturing. Certain mechanical and chemical processes required for the preparation of the mineral for the market after its extraction from the ground may be performed either at the mine or at the factory where the mineral is used as material. The practices in this respect vary from industry to industry and from period to period.

At the Thirteenth Census the production of cement was classified as a manufacturing industry. The burning of lime was likewise classified as a manufacturing industry, and where the lime was burned at the limestone quarry the quarrying was regarded as a subordinate part of the manufacturing operations. At the special census of mines and quarries in 1902, however, the cement industry was included, and the burning of lime was treated as a part of the operations of the limestone quarries. In order to make the statistics for the two censuses comparable, the figures given in Table 5 include for 1909 those for the burning of lime, elsewhere treated as a manufacturing industry, and exclude for 1902 those relating to the production of cement.

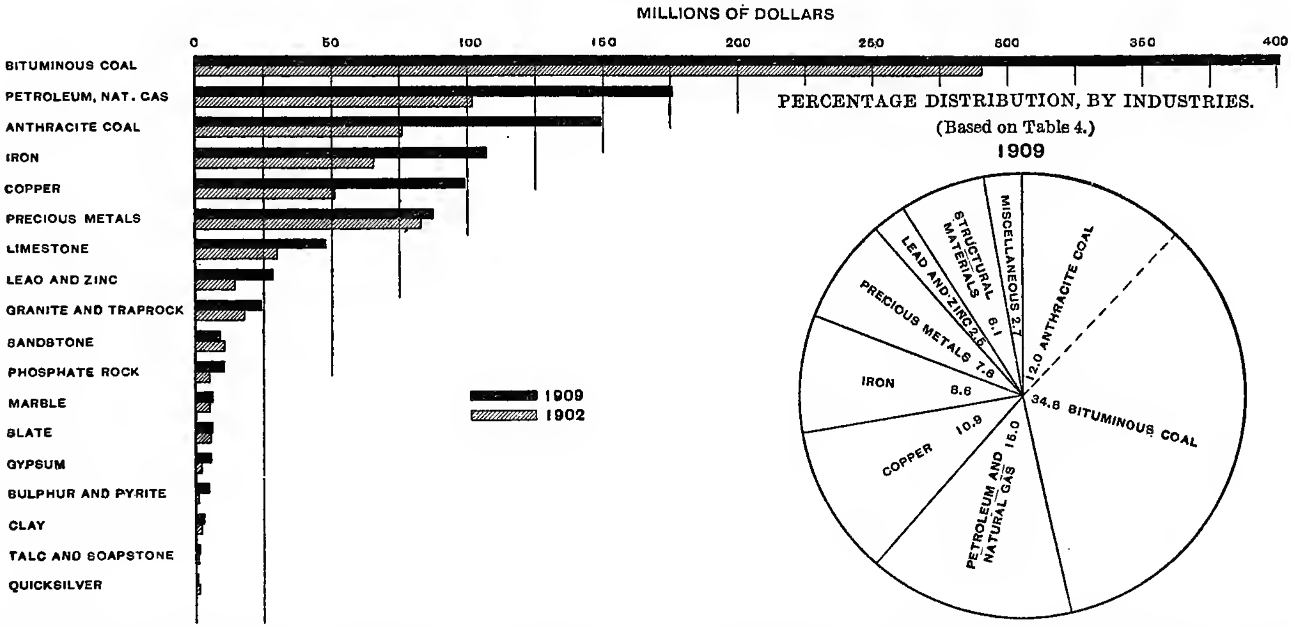
On the other hand, the special census of 1902 did not include the conversion of coal into coke at the coal mines. In the Thirteenth Census reports the coke industry is treated both in the report on manufactures and in that on mines. Where coal was turned into coke at the mines, estimates were obtained for the coke-manufacturing operations and included in the statistics of manufactures. At the same time, since the mining of the coal and its conversion at the mines into coke form, in fact, integral parts of one industrial operation, the complete report for both processes is included in the statistics for bituminous coal mines. In order, however, to make the statistics for 1909 comparable with those for 1902, all statistics relating to coke have been eliminated from the table which follows.

By reason of these adjustments the figures here printed do not correspond either to those given in the report for 1902 or to those printed elsewhere for 1909.

Table 5	NUMBER OR AMOUNT.		Per cent of increase.
	1909	1902	
Expenses of operation and development:			
Services	$625,610,068	$401,225,547	55.9
Supplies and materials	208,771,046	114,515,832	82.3
Royalties and rent of mines	62,456,760	34,476,227	81.2
Contract work	24,091,986	20,638,127	16.7
Value of products	1,175,475,001	771,486,926	52.4
Primary horsepower	4,556,170	2,663,964	71.0

The item "taxes, rent of offices, and other sundry expenses," which is included with the expenses of operation and development in the tables giving statistics for 1909 only, is not shown in this table for the reason that at the special census of mines and quarries in 1902 the corresponding item of expenses included interest, which was excluded at the Thirteenth Census. In 1902 the item of interest on bonds amounted to more than $13,000,000. The amount of interest paid on other loans was not reported separately. The aggregate expenses shown in the preceding table represent 96.3 per cent of the total expenses reported for 1902 exclusive of interest on bonds, while the aggregate for 1909 represents 90.6 per cent of the total expenses for that year.

In 1902 the products of mining industries were valued at $771,486,926, but in 1909 the value was reported as $1,175,475,001, an increase of 52.4 per cent in the seven years.



VALUE OF PRODUCTS, MINING INDUSTRIES: 1902 AND 1909.

(Based on Table 1, p. 317.)

PERCENTAGE DISTRIBUTION, BY INDUSTRIES.

(Based on Table 4.)

1909

Table 1, page 317, gives comparative statistics in detail for the years 1909 and 1902, by industries. Table 6, which is based on this table, gives for the leading mining industries the value of products in 1909 and 1902, with the percentage of increase.

Table 6 INDUSTRY.	VALUE OF PRODUCTS.		Per cent of increase.
	1909	1902	
All industries	$1,175,475,001	$771,486,926	52.4
Coal	550,513,866	366,642,015	50.2
Anthracite	149,180,471	76,173,586	95.8
Bituminous	401,333,395	290,468,429	38.2
Petroleum and natural gas	175,527,807	102,034,590	72.0
Copper	99,493,799	51,178,036	94.4
Iron	106,947,082	65,460,985	63.4
Precious metals	87,671,553	82,482,052	6.3
Deep mines	77,434,301	77,154,326	0.4
Placer mines	10,237,252	5,327,726	92.2
Lead and zinc	28,568,547	14,600,177	95.7
Limestone	47,784,479	30,278,877	57.8
Granite and traprock	24,576,293	18,042,943	36.2
Phosphate rock	10,781,192	4,922,943	119.0

This table shows that the greatest relative increase in the seven-year period was in the phosphate rock industry. The smallest relative increase (6.3 per cent) was in the mining of precious metals, the deep mines showing an increase in value of products amounting to only 0.4 per cent, although the less important placer mines show an increase of 92.2 per cent. Large increases are shown for the mining of copper and of lead and zinc. There was also a large increase in the case of anthracite coal, but on account of the coal strike in 1902 the figures for that year do not represent normal conditions. The percentage of increase in the bituminous coal-mining industry falls considerably below the average for all mining industries in the period under consideration. To some extent this is due to a decline in the average price of bituminous coal, for the tonnage produced increased more than 45 per cent.

Table 2, page 318, gives comparative statistics in detail for the years 1909 and 1902, by states. The following table presents certain figures for those states which show a relative increase in the value of products above the average for the United States:

Table 7

STATE.	VALUE OF PRODUCTS. 1909	VALUE OF PRODUCTS. 1902	Per cent of increase.
Louisiana	$6,539,850	$279,327	2,241.3
Florida	8,915,181	2,943,806	202.8
Minnesota	58,975,781	25,620,677	130.2
Nebraska	322,517	148,391	117.3
New Jersey	8,548,858	4,042,047	111.5
Illinois	77,214,345	37,377,226	106.6
California	59,012,946	28,611,307	106.3
Wisconsin	8,575,402	4,257,685	101.4
Washington	10,826,603	5,393,659	100.7
Kansas	18,386,812	9,526,060	93.0
North Dakota	564,812	325,967	73.3
Arkansas	4,764,784	2,840,341	67.8
Texas	11,095,588	6,737,696	64.7

Corresponding figures for those states in which the value of products showed an actual decrease from 1902 to 1909 are given in Table 8.

Table 8

STATE.	VALUE OF PRODUCTS. 1909	VALUE OF PRODUCTS. 1902	Per cent of decrease.
Colorado	$39,397,859	$40,508,286	2.7
Massachusetts	4,332,218	4,499,401	3.7
South Dakota	6,415,788	6,697,797	4.2
Georgia	2,924,741	3,080,287	6.0
Maine	3,270,766	3,656,134	10.5
Maryland	6,164,122	7,162,113	13.9
Indiana	22,324,647	26,896,393	17.0
Oregon	1,237,292	2,087,389	40.7

Colorado and Indiana are the only important mining states that show a decrease in mining activity. This decline in Colorado is manifested not only in the value of products, but also in the amount expended for salaries and wages, which decreased 7.2 per cent, and for royalties, which decreased 4.4 per cent.

Geographic distribution of the principal industries: 1909.—Table 9 gives statistics, by leading states, for each of the nine leading mining industries. A graphic presentation of the value of products is made in the following diagram:

VALUE OF PRODUCTS, LEADING INDUSTRIES, BY STATES: 1909.

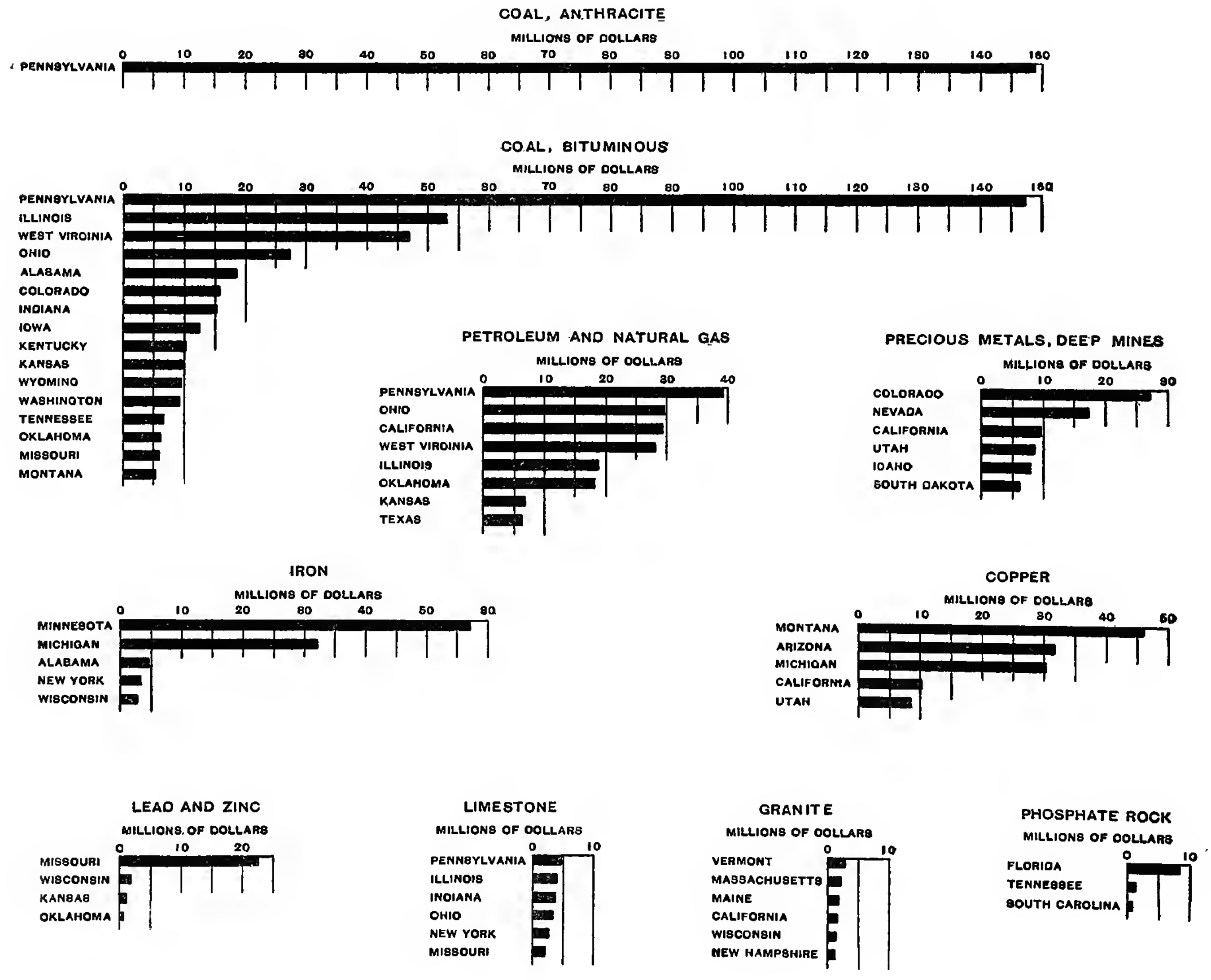


Table 9

INDUSTRY AND STATE.	Number of operators.	WAGE EARNERS (DEC. 15, OR NEAREST REPRESENTATIVE DAY).		VALUE OF PRODUCTS.	
		Number.	Per cent of total.	Amount.	Per cent of total.
Coal, anthracite	192	173,504	100.0	$149,180,471	100.0
Pennsylvania	189	173,263	99.9	148,957,894	99.9
Coal, bituminous	3,503	569,789	100.0	427,962,464	100.0
Pennsylvania	689	184,408	32.4	147,466,417	34.5
Illinois	470	74,445	13.1	53,030,545	12.4
West Virginia	307	69,666	12.2	46,929,592	11.0
Ohio	441	44,405	7.8	27,353,663	6.4
Alabama	112	23,479	4.1	18,459,433	4.3
Colorado	86	15,461	2.7	15,782,197	3.7
Indiana	223	22,357	3.9	15,018,123	3.5
Iowa	258	17,623	3.1	12,682,106	3.0
Kentucky	240	19,655	3.4	10,003,481	2.3
Kansas	118	12,791	2.2	9,835,614	2.3
Wyoming	35	7,839	1.4	9,721,134	2.3
Washington	32	6,155	1.1	9,226,793	2.2
Tennessee	85	11,154	2.0	6,688,454	1.6
Oklahoma	56	8,814	1.5	6,185,078	1.4
Missouri	173	9,526	1.7	5,881,034	1.4
Montana	48	4,612	0.8	5,117,444	1.2
Petroleum and natural gas	7,793	39,831	100.0	185,416,684	100.0
Pennsylvania	3,030	7,397	18.6	39,197,475	21.1
Ohio	1,188	5,897	14.8	29,620,959	16.0
California	339	7,007	17.6	29,310,335	15.8
West Virginia	442	7,093	17.8	28,188,087	15.2
Illinois	323	4,059	10.2	18,895,815	10.2
Oklahoma	711	3,066	7.7	17,685,092	9.5
Kansas	217	1,302	3.3	6,681,780	3.6
Texas	163	1,405	3.5	6,391,313	3.4
Copper	161	53,143	100.0	134,616,987	100.0
Montana	35	13,697	25.8	45,960,517	34.1
Arizona	43	11,394	21.4	31,614,116	23.5
Michigan	7	19,022	35.8	30,165,443	22.4
California	9	2,510	4.7	10,104,373	7.5
Utah	22	3,304	6.2	8,432,099	6.3
Iron	176	52,230	100.0	106,947,082	100.0
Minnesota	20	16,218	31.1	57,076,135	53.4
Michigan	24	16,125	30.9	32,168,133	30.1
Alabama	25	5,666	10.8	4,939,149	4.6
New York	14	2,542	4.9	3,095,023	2.9
Wisconsin	6	1,455	2.8	2,972,584	2.8
Precious metals, deep mines	1,604	33,616	100.0	83,885,928	100.0
Colorado	439	7,586	22.6	27,147,937	32.4
Nevada	218	3,818	11.4	17,807,945	21.2
California	395	6,622	19.7	9,690,956	11.6
Utah	108	3,905	11.6	8,541,522	10.2
Idaho	60	3,077	9.2	7,926,602	9.4
South Dakota	13	3,466	10.3	6,120,970	7.3
Precious metals, placer mines	678	4,199	100.0	10,237,252	100.0
California	392	3,073	73.2	8,751,032	85.5
Lead and zinc	977	21,603	100.0	31,363,094	100.0
Missouri	617	16,319	75.5	22,565,528	71.9
Wisconsin	88	1,753	8.1	1,989,907	6.3
Kansas	189	848	3.9	1,059,540	3.4
Oklahoma	47	724	3.4	695,235	2.2
Limestone	1,685	37,695	100.0	29,832,492	100.0
Pennsylvania	311	7,179	19.0	4,733,819	15.9
Illinois	81	3,276	8.7	3,977,359	13.3
Indiana	126	3,724	9.9	3,616,696	12.1
Ohio	144	3,746	9.9	3,363,149	11.3
New York	127	3,104	8.2	2,656,142	8.9
Missouri	144	2,437	6.5	2,027,902	6.8
Granite	707	20,561	100.0	18,997,978	100.0
Vermont	51	2,035	9.9	2,829,522	14.9
Massachusetts	82	2,278	11.1	2,185,986	11.5
Maine	85	2,132	10.4	1,761,801	9.3
California	62	1,318	6.4	1,518,916	8.0
Wisconsin	21	1,448	7.0	1,433,105	7.5
New Hampshire	40	1,305	6.3	1,205,811	6.3
Phosphate rock	51	8,186	100.0	10,781,182	100.0
Florida	26	5,105	62.4	8,488,801	78.7
Tennessee	23	1,725	21.1	1,395,942	12.9
South Carolina	5	1,307	16.0	862,409	8.0

Statistics are given for each of the states where the industry in question is important either by reason of the absolute value of the product or of its proportion of the total for the industry. In most of the industries here shown the production is so concentrated that the states given represent upward of nine-tenths of the entire production, but in the case of the lead and zinc, limestone, and granite industries, the aggregate value of the products reported by the states named falls short of this fraction.

Of the value of the products of the bituminous coal mines in 1909, Pennsylvania contributed more than one-third, and a group of five states—Pennsylvania, West Virginia, Ohio, Indiana, and Illinois—together reported more than two-thirds of the total. Including those just named, the table shows 16 states, situated in all parts of the Union, which had a product valued at more than $5,000,000. The anthracite coal production is practically confined to the state of Pennsylvania.

Petroleum and natural gas also show production centers in various parts of the country. Pennsylvania leads, with a little over one-fifth of the total value of products for the industry, but does not report so large a proportion of the total as in the case of coal.

More than one-third of the value of products for the copper industry in 1909 was represented by the product of Montana, while Arizona and Michigan each contributed over one-fifth. More than one-half of the value of products for the iron industry in 1909 was contributed by Minnesota and somewhat less than one-third by Michigan.

In the production of precious metals by placer mining California was the only important state, while nearly one-third of the value of products for deep mines was reported from Colorado and over one-fifth from Nevada. The production of Alaska is not included in the table, which relates exclusively to continental United States It may, however, be noted that the canvass of mines in Alaska by the Bureau of the Census gave $12,762,000 as the value of the products of placer mining in that territory. The inquiry of 1909 was the first attempt to secure information concerning placer mining in Alaska by census methods. The wide extent of the field and the difficulties of the inquiry lead to the belief that the product reported is considerably short of the actual product of the Alaska placer mines.

The lead and zinc industry is geographically far more closely concentrated than any thus far considered. In 1909 Missouri reported 71.9 per cent of the total value of products of this industry and employed 75.5 per cent of the wage earners engaged therein. The phosphate rock industry shows a marked concentration in the state of Florida, which reported 78.7 per cent of the total value of products and employed 62.4 per cent of all wage earners in the industry. On the other hand, the production of limestone and granite is widely distributed. In the case of the limestone industry, the six states which had a product exceeding $2,000,000 in value together reported but little more than two-thirds of the total value of products; and in the case of the granite industry the six states having a product in excess of $1,000,000 in value reported only 57.5 per cent of the total. In addition the variation in value of products among the states named in the table is much less marked in the case of these industries than in most of the other industries listed.

PERSONS ENGAGED IN MINING INDUSTRIES.

The number of persons engaged in mining industries, by classes, was ascertained as far as possible for December 15 of the year 1909. In those cases, however, where the mines were not in operation on that date, or the time records for that date were not obtainable, the numbers were ascertained for the nearest representative date. In addition to this information, the number of wage earners, without classification, was ascertained for the 15th day of every month.[1]

The whole number of persons engaged in connection with producing mines, quarries, and wells, as reported on December 15, or the nearest representative day, was 1,139,332, of whom 1,065,283 were wage earners. Since the representative day was taken in some other month than December, in many cases, because the mines were not in operation on December 15, as stated above, this number of wage earners is greater than the number actually engaged at any given time. The greatest number simultaneously employed in all producing mines was 1,022,885, this number being reported for November 15. This does not, however, represent the entire number of persons who gave all or a part of their time to mining in 1909. The busiest months do not coincide for all mining industries nor for all mines within a given industry. Mining, moreover, affords some contrast to manufactures with respect to employment. Whereas in the manufacturing cities there is some opportunity for wage earners to pass from one industry where employment is temporarily slack to another where labor is in greater demand, there is rarely sufficient diversity of mining industries in a given locality to permit such a shifting. Furthermore, even within an industry as widespread as bituminous coal mining, distance would largely prevent the employees of a mine temporarily shut down from seeking employment in other coal mines. The total number of wage earners reported for December 15, or the nearest representative day, namely, 1,065,283, may therefore be accepted as less, if anything, than the total number of wage earners who derived a livelihood from mining during the year 1909.

Distribution by sex and age.—Table 10 shows the classification of the persons employed in producing mines on the 15th day of December, or the nearest representative day.

Women were employed only in supervisory and clerical capacities, none being reported as wage earners in mining operations proper. It will be noted, moreover, that the reported number of boys under 16 years of age, 8,151, is less than 1 per cent of the whole number of wage earners employed.

Table 10

CLASS.	PERSONS ENGAGED IN PRODUCING ENTERPRISES: 1909		
	Total.	Male.	Female.
All classes	1,139,332	1,135,528	3,804
Proprietors and officials	49,374	47,931	1,443
Proprietors and firm members	29,922	28,571	1,351
Salaried officers of corporations	5,657	5,577	80
Superintendents and managers	13,795	13,783	12
Clerks and other salaried employees	24,675	22,314	2,361
Wage earners	1,065,283	1,065,283	....
16 years of age and over	1,057,132	1,057,132	....
Under 16 years of age	8,151	8,151	....

Distribution by industrial status.—Table 11 shows for all mining industries and for the nine most important industries separately the distribution of the persons engaged in producing enterprises according to general character of occupation or industrial status, together with the percentage that each class forms of the total.

Table 11

INDUSTRY.	PERSONS ENGAGED IN PRODUCING ENTERPRISES: 1909						
	Number.				Per cent of total.		
	Total.	Proprietors and officials.	Clerks and other salaried employees.	Wage earners.	Proprietors and officials.	Clerks and other salaried employees.	Wage earners.
All industries	1,139,332	49,374	24,675	1,065,283	4.3	2.2	93.5
Coal	770,681	12,935	14,453	743,293	1.7	1.9	96.4
Anthracite	178,004	1,315	3,185	173,504	0.7	1.8	97.5
Bituminous	592,677	11,620	11,268	569,789	2.0	1.9	96.1
Petroleum and natural gas	62,172	19,353	2,988	39,831	31.1	4.8	64.1
Copper	55,258	661	1,454	53,143	1.1	2.7	96.2
Iron	55,176	1,109	1,837	52,230	2.1	3.3	94.6
Precious metals	43,191	4,508	868	37,815	10.4	2.0	87.6
Lead and zinc	24,397	2,525	269	21,603	10.4	1.1	88.5
Limestone	41,029	2,645	689	37,695	6.4	1.7	91.9
Granite	22,211	1,248	402	20,561	5.6	1.8	92.6
Phosphate rock	8,573	214	173	8,186	2.5	2.0	95.5

Of the whole number of persons engaged in producing enterprises, 4.3 per cent were proprietors and officials, 2.2 per cent were clerks and other salaried employees, and 93.5 per cent were wage earners. The proportion of proprietors and officials ranges, among the industries given, from 1.1 per cent in the copper industry to 31.1 per cent in the petroleum and natural gas industry. Large proportions for proprietors and officials occur also in the production of the precious metals and of lead and zinc. In the anthracite branch of the coal industry proprietors and officials formed only 0.7 per cent of all persons engaged in the industry. The range of difference with respect to the proportion of clerks is much less than with respect to the proportion of proprietors and officials.

---

[1] It must be borne in mind that the business year for which returns were obtained did not in all cases coincide with the calendar year. As a result, the total for the month of December includes a few returns for December, 1908, when the business year ended before Dec. 31, 1909. In such cases it was assumed that the number employed on the 15th day of December, 1909, was approximately equal to the number reported for Dec. 15, 1908. The same applies to the figures for other months, some of which were reported for 1908 and others for 1910. The statistics of the number of wage earners must, therefore, be regarded as approximations; they are sufficiently close, however, for purposes of general comparison.

Proprietors performing manual labor.—Table 12 gives, for the principal mining industries, the number of proprietors and firm members compared with the number and percentage who performed manual labor.

Table 12

INDUSTRY.	PROPRIETORS AND FIRM MEMBERS IN PRODUCING ENTERPRISES: 1909		
	Total.	Performing manual labor.	
		Number.	Per cent.
All industries	29,922	8,861	29.6
Coal, bituminous	3,739	1,713	45.8
Petroleum and natural gas	16,213	2,155	13.3
Precious metals:			
Placer mines	951	673	70.8
Deep mines	2,011	951	47.3
Lead and zinc	1,947	1,171	60.1
Limestone	1,634	640	39.2
Granite	730	318	43.6

Mine operators of the old type who operate their mines without the assistance of hired help or with little help are still quite numerous, as appears from the fact that out of a total of 29,922 proprietors and firm members in 1909, 8,861, or nearly three-tenths, were personally performing manual labor in or about their enterprises. The industries in which proprietors of this type were relatively the most numerous include bituminous coal mining, in which 45.8 per cent of the proprietors and firm members were performing manual labor; lead and zinc mining, and placer mining (surface gold washing), in each of which industries a majority of the proprietors were working in their own mines; and deep gold and silver mines, in which nearly one-half of all proprietors belonged to this class. There are also a considerable number of proprietors and firm members performing manual labor in the petroleum and natural gas industry, but as the whole number of proprietors and firm members is very large, they constitute a comparatively small percentage of the total.

Wage earners by occupation.—Table 13 gives for all mining industries and for the nine most important industries separately the number of wage earners in producing mines classified by specific occupation and by age group, distinguishing those who work above and those who work below ground.

Table 13

CLASS OF WAGE EARNERS.	All mining industries.	COAL.			Petroleum and natural gas.	Copper.	Iron.	Precious metals.	Lead and zinc.	Limestone.	Granite.	Phosphate rock.
		Total.	Bituminous.	Anthracite.								
All wage earners (producing enterprises only)	**1,065,283**	**743,293**	**569,789**	**173,604**	**39,831**	**53,143**	**52,230**	**37,815**	**21,603**	**37,695**	**20,561**	**8,186**
Men 16 years of age and over	1,057,132	736,325	566,068	170,257	39,820	53,077	51,741	37,803	21,573	37,572	20,474	8,119
Engineers, firemen, mechanics, etc	103,519	42,098	29,826	12,272	27,063	6,860	7,073	5,710	3,745	3,224	1,921	1,049
Miners, miners' helpers, quarrymen, and stonecutters	627,513	467,179	384,023	83,156	....	28,570	24,926	21,855	12,552	25,748	14,290	4,375
All other wage earners	326,100	227,048	152,219	74,829	12,757	17,647	19,742	10,238	5,276	8,600	4,263	2,695
Boys under 16 years of age	8,151	6,968	3,721	3,247	11	66	489	12	30	123	87	67
Above ground, total	366,962	142,843	94,090	48,753	39,831	22,481	24,889	15,333	8,062	37,695	20,561	7,925
Men 16 years of age and over	361,928	138,792	93,273	45,519	39,820	22,420	24,569	15,324	8,037	37,572	20,474	7,858
Engineers, firemen, mechanics, etc	93,586	34,141	24,389	9,752	27,063	6,238	6,597	5,112	3,584	3,224	1,921	1,049
Miners, miners' helpers, quarrymen, and stonecutters	78,380	....	....	....	....	1,269	4,736	2,870	427	25,748	14,290	4,117
All other wage earners	189,962	104,651	68,884	35,767	12,757	14,913	13,236	7,342	4,026	8,600	4,263	2,692
Boys under 16 years of age	5.034	4,051	817	3,234	11	61	320	9	25	123	87	67
Below ground, total	698,321	600,450	475,699	124,751	....	30,662	27,341	22,482	13,541	....	....	261
Men 16 years of age and over	695,204	597,533	472,795	124,738	....	30,657	27,172	22,479	13,536	....	....	261
Engineers, firemen, mechanics, etc	9,933	7,957	5,437	2,520	....	622	476	598	161	....	....	....
Miners and miners' helpers	549,133	467,179	384,023	83,156	....	27,301	20,190	18,985	12,125	....	....	258
All other wage earners	136,138	122,397	83,335	39,062	....	2,734	6,506	2,896	1,250	....	....	3
Boys under 16 years of age	3,117	2,917	2,904	13	....	5	169	3	5	....	....	....

This table gives further information in regard to the employment of boys under 16 years of age. Only eight-tenths of 1 per cent of the wage earners in all mining industries were boys under 16 years of age, and of these only three-eighths were employed below ground. The largest number of boys under 16 years of age (3,721) were employed in bituminous coal mining, though 3,247 were employed in the anthracite coal-mining industry, where they formed nearly 2 per cent of the whole number of wage earners—a higher percentage than in any other industry shown in the table. Most of the boys in the anthracite coal industry, however, were employed above ground. In none of the other industries shown in the table did the proportion of boys under 16 years of age reach 1 per cent of the whole number of wage earners.

Miners and miners' helpers, quarrymen, and stonecutters constitute the most numerous class of wage earners, forming, in 1909, 58.9 per cent of the whole number employed in all industries combined. The proportion of miners and miners' helpers reached 67.4 per cent in the bituminous coal industry and 47.9 per cent in anthracite coal mining. It was about the same in the iron mines, but somewhat greater in the other industries employing miners. In the limestone and granite industries quarrymen and stonecutters are naturally the largest numerical group.

The wage earners included under the heading of "Engineers, firemen, mechanics, etc.," constituted 9.7 per cent of all wage earners employed in mining in 1909. The proportion was lowest in the coal industry, where such wage earners formed 5.7 per cent of the total, and highest in the petroleum and natural gas industry, where they constituted 67.9 per cent. The miscellaneous group "All other wage earners," which is composed mostly of unskilled laborers, comprised 30.6 per cent of all wage earners employed. The proportion in this class was largest in anthracite coal mining (43.1 per cent) and smallest in the granite industry (20.7 per cent).

In all mining industries about one-third of the wage earners (34.4 per cent) were employed above ground and about two-thirds (65.6 per cent) below ground. The two branches of the coal-mining industry have a larger proportion of their wage earners below ground than any other mining industry. In the phosphate rock industry only 3.2 per cent of the wage earners were employed below ground, while three of the industries named in the table—the petroleum and natural gas, limestone, and granite industries—are exclusively surface industries.

Contract work.—In addition to the work performed by wage earners regularly engaged in mining and by the proprietors who contribute their own labor to the operation of the mines, a portion of the work incident to mining is done by contract. The number of wage earners employed by contractors can not be ascertained, because the work is temporary and the same men after completing one job are shifted to another place. A special form of contract work common in certain metalliferous mines is the working of mines in return for a share of the product. Under this system a miner "leases" a block in a mine on a royalty basis; the product is delivered by him to the mine owner, who disposes of it, deducts the royalty, and pays the "lessee" his share. In the operation of petroleum and natural gas wells, little labor is required. This condition has called into existence a special class of mechanics who contract with individual operators to take care of their properties, devoting to each property only a part of their time.

The relative importance of work done under contract, as compared with the work performed by regular wage earners, is shown by a comparison of the total amount paid out in wages with the total expenditure for contract work. While the total wages paid in the United States in 1909 amounted to $586,774,000, the total expenditure for contract work amounted to $28,888,000, which included $3,798,000 paid to miners compensated by a share of the product, and $1,035,000 paid to part-time men for taking care of petroleum and natural gas wells. There were 3,261 operators, or 16.4 per cent of the total number in the United States, whose properties were operated exclusively by contract work, as defined above. This form of operation was more or less general with operators of petroleum and natural gas wells, of whom 3,021, or 38.8 per cent, belonged to this class. Next in point of numbers were 104 operators of deep mines of precious metals, or 6.5 per cent of all operators engaged in that industry, who employed contract labor exclusively. In all other industries combined this class included only 136 operators, or 1.3 per cent of the total.

Number of persons employed, by months.—Table 14 shows the number of wage earners reported for the 15th of each month in producing enterprises in all mining industries combined and in coal mining separately, the latter industry, as already noted, including nearly 70 per cent of all wage earners in producing enterprises.

Table 14

MONTH.	WAGE EARNERS IN PRODUCING ENTERPRISES: 1909					
	All mining industries.		Coal.		All other mining industries.	
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January	940,119	91.9	691,244	94.8	248,875	80.7
February	936,418	91.5	686,322	94.1	250,096	81.2
March	943,493	92.2	679,791	93.2	263,702	85.5
April	928,563	90.8	649,870	89.1	278,693	90.4
May	937,002	91.6	646,592	88.7	290,410	94.2
June	949,615	92.8	652,894	89.5	296,721	96.2
July	961,940	94.0	659,434	90.4	302,506	98.1
August	971,263	95.0	667,146	91.5	304,117	98.6
September	993,075	97.1	685,234	94.0	307,841	99.8
October	1,013,326	99.1	704,939	96.7	308,387	100.0
November	1,022,885	100.0	720,341	98.8	302,544	98.1
December	1,013,895	99.1	729,273	100.0	284,622	92.3

For all industries combined the largest number of wage earners, 1,022,885, was reported for November and the smallest, 928,563, or 90.8 per cent of the maximum, for April. The figure for April, however, is only slightly below the figures for the three preceding months of the year. From April to November the number increased gradually, but December showed a slight falling off. In coal mining the month of greatest activity was December, and that of least activity was May, when the number employed was equal to 88.7 per cent of the number employed in December. From May to December there was a steady increase in the number of wage earners employed. It should be noted that the figures in this table furnish only a most unsatisfactory indication of the regularity of employment. In the coal-mining industry in particular many mines operate only part of the days each week or each month, and while the number of wage earners on the rolls on the 15th of the month (which is more often reported than the number actually drawing pay) may be substantially the same from month to month, yet the average number of days each miner works during the year may be much less than the possible number of working days. In other words, there is a good deal of unemployment so distributed through the year as not to cause much fluctuation in the monthly returns.

For the principal industries Table 15 shows the month of maximum and of minimum employment, the number reported for each of these months, and the percentage which the minimum represents of the maximum.

Table 15

INDUSTRY	WAGE EARNERS IN PRODUCING ENTERPRISES: 1909				
	Maximum.		Minimum.		
	Month.	Number.	Month.	Number.	Per cent of maximum.
All industries	**Nov**	**1,022,885**	**Apr**	**828,663**	**90.8**
Coal	Dec	729,273	May	646,592	88.7
Anthracite	Mar	173,025	Aug	165,740	95.8
Bituminous	Dec	560,089	May	478,455	85.4
Petroleum and natural gas	Nov	39,932	Feb	33,521	83.9
Copper	Oct	53,148	Dec	50,151	94.4
Iron	Oct	51,055	Jan	43,491	85.2
Precious metals	July	33,869	Dec	30,751	90.8
Lead and zinc	Dec	18,374	Jan	15,330	83.4
Limestone	Sept	37,209	Jan	17,908	48.1
Granite	Sept	21,899	Jan	13,732	62.7
Phosphate rock	July	8,114	Oct	7,610	93.8

The coal industry is divided in this table into its two constituent branches. Anthracite mining shows greater regularity of employment from month to month than bituminous mining. It will be noted that the months of maximum and minimum employment for the two branches do not correspond. For the remaining industries the month of maximum employment is generally in the fall of the year except in the case of the production of precious metals and of phosphate rock, where it is July. The quarrying industries, limestone and granite quarrying, show a wide divergence between the months of maximum and minimum employment, due to the fact that they are surface industries and much affected by weather conditions. For both industries the smallest number of wage earners was reported for January.

Prevailing hours of labor.—In Table 16 producing mines and quarries have been classified according to the prevailing hours of labor per day in each enterprise. Petroleum and natural gas wells are not included in this table, because many of them are operated without hired labor, or by men who give to each enterprise only a part of their time. Neither are those enterprises included in which all labor is performed by contractors. The table shows the percentage of the total number of enterprises falling into each group, and a percentage distribution in which each enterprise has been given a weight according to the total number of wage earners employed on December 15, 1909, or the nearest representative day. It should be clearly borne in mind that these latter percentages do not show precisely the proportion of the total number of wage earners working the specified number of hours per day, since in many cases some of the employees work a greater or less number of hours than those generally prevailing in the enterprise. The table shows that about one-half of the enterprises have adopted the 8-hour day, while the other half are operated on a 9-hour or 10-hour basis. There is considerable variation in this respect among the several mining industries. The prevailing hours are 8 or less per shift in more than nine-tenths of the deep gold and silver mines, more than five-sixths of the copper mines, about three-fourths of the lead and zinc mines, more than two-thirds of the bituminous coal mines, about three-fifths of the placer mines, and slightly less than one-half of the granite quarries. The 9-hour shift is predominant in anthracite coal mines and the 10-hour day in iron mines, limestone quarries, and the phosphate rock industry. In very few mines do the prevailing hours exceed 10 per shift, the only conspicuous exception being the phosphate rock industry, in which 11 or 12 hours per shift constitute the prevailing hours for over one-fourth of the enterprises.

Table 16

INDUSTRY AND HOURS PER DAY.	ENTERPRISES.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent.	
All industries	**12,192**	**100.0**	**100.0**
8 hours and under	5,876	48.2	44.5
9 hours	1,822	14.9	26.9
10 hours	4,393	36.0	27.5
11 hours	31	0.3	0.3
12 hours	70	0.6	0.8
Coal, anthracite	353	100.0	**100.0**
8 hours and under	13	3.7	1.7
9 hours	289	81.9	97.9
10 hours	50	14.1	0.4
12 hours	1	0.3	(1)
Coal, bituminous	**4,284**	100.0	**100.0**
8 hours and under	2,922	68.2	59.5
9 hours	554	12.9	13.9
10 hours	804	18.8	25.7
12 hours	4	0.1	0.9
Copper	**200**	100.0	**100.0**
8 hours	170	85.0	81.8
9 hours	17	8.5	12.5
10 hours	12	6.0	5.3
12 hours	1	0.5	0.3
Iron	293	100.0	**100.0**
8 hours	15	5.1	3.9
9 hours	19	6.5	3.9
10 hours	254	86.7	90.4
11 hours	4	1.4	1.6
12 hours	1	0.3	0.3
Precious metals, deep mines	1,302	100.0	**100.0**
8 hours and under	1,192	91.6	95.4
9 hours	49	3.8	2.7
10 hours	45	3.5	1.7
12 hours	16	1.2	0.2
Precious metals, placer mines	**485**	**100.0**	**100.0**
8 hours and under	288	59.4	69.5
9 hours	46	9.5	12.2
10 hours	138	28.5	15.0
11 hours	4	0.8	1.6
12 hours	9	1.9	1.7
Lead and zinc	807	100.0	**100.0**
8 hours and under	597	74.0	82.1
9 hours	130	16.1	8.0
10 hours	70	8.7	9.6
11 hours	1	0.1	0.2
12 hours	9	1.1	0.1
Limestone	**1,544**	**100.0**	**100.0**
8 hours and under	120	7.8	3.4
9 hours	187	12.1	6.3
10 hours	1,231	79.7	88.8
11 hours	4	0.3	0.4
12 hours	2	0.1	1.1
Granite	**892**	100.0	**100.0**
8 hours	332	48.0	54.6
9 hours	171	24.7	18.5
10 hours	188	27.2	26.7
11 hours	1	0.1	0.2
Phosphate rock	69	**100.0**	**100.0**
8 hours	1	1.4	(1)
10 hours	50	72.5	67.5
11 hours	8	11.6	11.8
12 hours	10	14.6	20.7

[1] Less than one-tenth of 1 per cent.

LAND TENURE.

In mining, as in agriculture, land is the source from which wealth is drawn, and the control of land is an important factor in mining operations. The Thirteenth Census was the first at which the inquiry into land tenure was extended to all branches of the mining industry. Table 17 gives, for all mining industries combined and for the nine most important industries separately, statistics of the land controlled, distinguishing the character of the land and also the form of tenure.

Table 17

INDUSTRY.	ACREAGE OF LAND CONTROLLED BY PRODUCING ENTERPRISES: 1909								
	All land.				Mineral and oil land.			Timber land.	Other land.
	Total.	Owned.	Held under lease.	Per cent owned.	Total.	Owned.	Held under lease.		
All industries	**[1] 24,215,611**	**9,389,121**	**14,838,179**	**38.8**	**[2] 21,414,662**	**6,920,673**	**14,504,964**	**1,138,901**	**1,662,048**
Coal	[1] 8,182.749	5,952,110	2,242,328	....	[2] 6,847,545	4,732,556	2,125,964	435,216	899,988
Anthracite	[1] 465,134	316,867	159,956	68.1	[2] 274,359	183,144	102,190	71,851	118,924
Bituminous	7,717,615	5,635,243	2,082 372	73.0	6,573,186	4,549,412	2,023,774	363,365	781,064
Petroleum and natural gas	12,694,838	686,268	12,008,570	5.4	12,694,838	686,268	12,008,570	....	....
Copper	275,598	270,771	4,827	98.2	126,851	122,798	4,053	57,781	90,966
Iron	1,313,214	1,064,227	248,987	81.0	387,608	282,661	104,947	456,682	468,924
Precious metals	588,263	461,158	127,105	78.4	469,455	397,097	72,358	33,745	85,063
Lead and zinc	125,322	102,569	22,753	81.8	103,555	81,418	22,137	10,120	11,647
Limestone	128,495	96,084	32,411	74.8	88,152	58,774	29,378	9,176	31,167
Granite	51,398	42,960	8,438	83.6	39,548	32,035	7,513	3,266	8,584
Phosphate rock	340,697	327,726	12,971	96.2	243,221	230,405	12,816	92,580	4,896

[1] Exclusive of 11,689 acres reported both in acreage owned and acreage held under lease.
[2] Exclusive of 10,975 acres reported both in acreage owned and acreage held under lease.

The total acreage of all land controlled by producing enterprises was 24,216,000 acres. Of course, not all of this area was in actual use, large tracts being held in reserve. The greater part of this land was mineral and oil land, but there were 1,139,000 acres of timber land and 1,662,000 acres of other land. Under these two headings are comprised land which had not been prospected and whose mineral resources were still unknown, as well as some land used for building and other purposes.

In comparing the statistics of land controlled for different industries or different states, it should be noted that the area of land is not necessarily an index of the importance of the holdings, as some land is far more rich in minerals than other land.

Of the total area controlled by operators of mining enterprises in 1909, more than one-half was connected with the petroleum and natural gas industries. Of the remainder, by far the largest part was reported for the coal industry. The holdings of the bituminous mines are far more extensive in comparison with the value of the products of those mines than those of the anthracite mines. The holdings of land by operators of iron mines are also very considerable. Some indication of the amount of reserve land held in the different industries is afforded by the proportion reported under the description of "Timber land" and "Other land." This proportion is greatest in the iron industry.

Of the total amount of land controlled by mine operators, 38.8 per cent was owned by the operators themselves and the remainder held under lease. The petroleum and natural gas industry, in which most of the land is held under lease, presents a marked contrast to all the other industries shown in the table. Excluding the land controlled in the petroleum and natural gas industry, operators in other mining industries controlled 11,521,000 acres, of which 8,703,000 acres, or 75.5 per cent, were owned by the operators. The two industries showing the widest departure from this proportion are the copper industry, in which the operators owned 98.2 per cent of the land controlled, and the phosphate rock industry, where the proportion of land owned was 96.2 per cent. The proportions owned in the coal industry and its two branches—72.7 per cent for the industry as a whole, 68.1 per cent for the anthracite branch, and 73 per cent for the bituminous branch—fell somewhat below the proportion given above for all mining industries exclusive of the petroleum and natural gas industry.

FORM OF ORGANIZATION.

Table 18 on the next page has for its purpose the presentation of conditions with respect to the form of organization of producing mining enterprises for all mining industries combined and the nine leading industries separately.

The most important distinction brought out by the table is that between corporate and all other forms of organization. Among 19,915 operators of producing mines, quarries, and wells, 7,041, or 35.4 per cent, were corporations. These incorporated enterprises, however, employed 90.6 per cent of the wage earners engaged in mining enterprises, and reported 91.4 per cent of the total value of products. Individuals formed 32.1 per cent of the whole number of operators, but they employed only 3.9 per cent of the wage earners and are credited with only 3 per cent of the total value of products. The proportions for firms differ but little from those for individuals, being slightly less in the case of the number of operators and slightly greater in the case of the number of wage earners and the value of products. Moreover, it may be noted that while the average value of products was $160,832 per operator for corporations, it was only $9,136 for firms and only $5,723 for individuals.

Corporations constituted a majority of the operators in the phosphate rock industry (88.2 per cent), the iron industry (73.3 per cent), the copper industry (67.4 per cent), and the coal industry (52.6 per cent). In the copper industry corporations employed 99 per cent of the total number of wage earners. Other industries where a very large percentage of the wage earners were employed by corporations are iron mining (98.1 per cent), the phosphate rock industry (95.8 per cent), and coal mining (93.6 per cent). More than 90 per cent of the total value of products in the mining industry as a whole was credited to corporations. The largest percentages for the individual industries were as follows: The iron industry, 99.6 per cent; the copper industry, 99.1 per cent; the phosphate rock industry, 96.4 per cent; the coal-mining industry, 94.4 per cent; and the precious metal industries, 92.2 per cent. The two quarrying industries—the limestone and granite industries—are the only ones shown in the table in which as much as 25 per cent of the total value of products is credited to other than corporate enterprises.

Table 18

INDUSTRY AND FORM OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909				PER CENT OF TOTAL.		
	Number of operators.	Number of wage earners.	Value of products.		Number of operators.	Wage earners.	Value of products.
			Total.	Per operator.			
All industries	19,915	1,065,283	$1,238,410,322	$62,185	100.0	100.0	100.0
Individual	6,387	41,908	36,551,114	5,723	32.1	3.9	3.0
Firm	6,262	50,777	57,209,620	9,136	31.4	4.8	4.7
Corporation	7,041	965,483	1,132,418,758	160,832	35.4	90.6	91.4
Other	225	7,115	12,230,830	54,359	1.1	0.7	0.9
Coal	3,695	743,293	577,142,935	156,193	100.0	100.0	100.0
Individual	1,058	17,475	10,490,068	9,915	28.6	2.4	1.8
Firm	664	24,699	17,111,132	25,770	18.0	3.3	3.0
Corporation	1,942	695,985	544,885,641	280,585	52.6	93.6	94.4
Other	31	5,134	4,656,094	150,197	0.8	0.7	0.8
Petroleum and natural gas	7,793	39,831	185,416,684	23,793	100.0	100.0	100.0
Individual	2,298	2,020	9,662,086	4,204	29.5	5.1	5.2
Firm	3,360	3,085	18,954,985	5,641	43.1	7.7	10.2
Corporation	1,966	32,636	149,358,498	75,971	25.2	81.9	80.6
Other	169	2,090	7,441,115	44,030	2.2	5.3	4.0
Copper	161	53,143	134,616,987	836,130	100.0	100.0	100.0
Individual	26	168	163,908	6,304	16.3	0.3	0.1
Firm	26	344	1,038,831	39,955	16.3	0.7	0.8
Corporation	109	52,631	133,414,248	1,223,984	67.4	99.0	99.1
Iron	178	52,230	106,947,082	607,654	100.0	100.0	100.0
Individual	23	481	222,946	9,693	13.1	0.9	0.2
Firm	24	536	201,411	8,392	13.6	1.0	0.2
Corporation	129	51,213	106,522,725	825,757	73.3	98.1	99.6
Precious metals	2,282	37,815	$94,123,180	$42,146	100.0	100.0	100.0
Individual	622	2,591	3,228,424	5,190	27.3	6.9	3.4
Firm	674	2,783	3,997,463	5,931	29.5	7.4	4.2
Corporation	967	32,232	86,750,458	88,884	42.8	85.2	92.2
Other	10	209	146,835	14,684	0.4	0.5	0.2
Lead and zinc	977	21,603	31,363,094	32,101	100.0	100.0	100.0
Individual	89	779	824,504	9,264	9.1	3.6	2.6
Firm	522	2,926	3,601,589	6,899	53.4	13.5	11.5
Corporation	366	17,898	26,937,001	73,598	37.5	82.9	85.9
Limestone	1,665	37,695	29,832,492	17,917	100.0	100.0	100.0
Individual	911	7,781	4,181,655	4,590	54.7	20.7	14.0
Firm	295	5,178	3,486,343	11,818	17.7	13.7	11.7
Corporation	451	24,551	22,061,746	48,917	27.1	65.1	74.0
Other	8	185	102,748	12,844	0.5	0.5	0.3
Granite	707	20,561	18,997,976	26,871	100.0	100.0	100.0
Individual	323	3,745	3,029,150	9,378	45.7	18.2	16.0
Firm	166	3,225	2,967,938	17,879	23.5	15.7	15.6
Corporation	215	13,490	12,923,039	60,107	30.4	65.6	68.0
Other	3	101	77,849	25,950	0.4	0.5	0.4
Phosphate rock	51	8,186	10,781,192	211,396	100.0	100.0	100.0
Firm	6	346	389,207	64,868	11.8	4.2	3.6
Corporation	45	7,840	10,391,985	230,933	88.2	95.8	96.4

Number of stockholders.—The law required the Bureau of the Census to collect statistics of the number of stockholders of corporations. The following table presents a summary of the returns from corporations, showing the number of their stockholders, separately for producing and nonproducing enterprises, and for each of the principal industries in parallel columns with the amount of capital invested reported by the same enterprises. It is probable that the number of stockholders includes many duplications, as the same person may own stock in many corporations. The figures are nevertheless instructive, showing as they do that the ownership of stock in mining companies was very widely diffused. The total number of stockholders reported by all companies exceeded 1,100,000, of whom nearly 800,000 were interested in producing enterprises, and over 300,000 in nonproducing enterprises.

Table 19

INDUSTRY.	ALL ENTERPRISES.			PRODUCING ENTERPRISES.			NONPRODUCING ENTERPRISES.		
	Number of incorporated companies.	Stockholders.	Capital.	Number of incorporated companies.	Stockholders.	Capital.	Number of incorporated companies.	Stockholders.	Capital.
All industries	**[1] 9,434**	**1,135,538**	**$3,420,468,488**	**[1] 7,042**	**796,176**	**$3,153,157,482**	**2,392**	**339,362**	**$267,311,006**
Coal:									
Anthracite	111	21,285	241,660,814	105	21,255	241,638,086	6	30	22,728
Bituminous	1,868	108,249	1,036,229,028	1,837	106,743	1,026,875,053	31	1,506	9,353,975
Petroleum and natural gas	2,175	175,759	566,958,151	1,966	154,976	553,649,356	209	20,783	13,308,795
Iron	[1] 145	78,699	304,569,827	[1] 129	78,255	299,862,084	16	444	4,707,743
Copper	122	120,567	308,980,258	109	113,582	297,906,481	13	6,985	11,073,777
Precious metals:									
Deep mines	2,766	475,988	644,064,683	820	191,694	423,407,430	1,946	284,294	220,657,253
Placer mines	215	12,412	54,334,850	156	7,660	51,558,680	59	4,752	2,776,170
Lead and zinc	401	24,251	60,652,437	366	22,769	59,618,457	35	1,482	1,033,980
Structural materials	1,124	83,150	114,390,123	1,107	82,161	113,532,258	17	989	857,865
Phosphate rock	45	972	30,380,413	45	972	30,380,413			
Sulphur	4	92	5,293,900	4	92	5,293,900			
All other industries	458	34,114	52,954,004	398	16,017	49,435,284	60	18,097	3,518,720

[1] Includes 1 not operated by incorporated company, in order to avoid disclosing individual operations.

SCALE OF PRODUCTION.

The tendency toward concentration in the mining industries can be measured by a classification of mine operators according to the number of wage earners employed or according to the value of the products per operator.

Classification according to number of wage earners.—Table 20, on the next page, gives, for all mineral industries combined and for the most important individual industries, a classification of producing enterprises according to the number of wage earners employed, and shows for each class the number of operators and the number of wage earners. It does not include those mines and quarries which were worked on contract or for a share of the product, nor does it include the petroleum and gas wells which were cared for by part-time employees.

It is worthy of note that the most numerous type of mine operator is the small producer, about three-fifths of all operators employing only from 1 to 20 men each, while more than one-tenth of all operators employed no wage earners at all. On the other hand, more than one-half of the total number of mine workers were employed by operators employing more than 500 men each, although such operators constituted only 1.7 per cent of the total number of operators. The degree of concentration varies in different industries. In anthracite coal mining over five-sixths of all wage earners were employed by the 18 largest operators, each of whom employed 1,000 or more men. Copper mining follows next, three-fourths of the wage earners in this industry being employed by the 12 largest operators, with a force of over 1,000 men each. Iron mining holds the third place, with 9 operators of this class employing more than one-half of the wage earners. There is also a large degree of concentration in bituminous coal mining, where 77 operators of this class, constituting 2.2 per cent of the total number, employed nearly one-half of the wage earners. In the production of petroleum and natural gas the degree of concentration is not as high as in the mining of coal, iron, and copper; the 8 largest operators, however, employed over two-fifths of the wage earners. On the other hand, in precious metal mining, lead and zinc mining, and stone quarrying, small-scale production is still the predominant type.

Table 20

INDUSTRY AND NUMBER OF WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	16,657	100.0	1,065,283	100.0
No wage earners	2,187	13.1		
1 to 5	6,292	37.8	14,788	1.4
6 to 20	3,837	23.0	43,083	4.0
21 to 50	1,973	11.8	64,327	6.0
51 to 100	983	5.9	71,045	6.7
101 to 500	1,105	6.6	242,999	22.8
501 to 1,000	155	0.9	110,191	10.3
Over 1,000	125	0.8	518,850	48.7
Anthracite coal	192	100.0	173,504	100.0
No wage earners	7	3.6		
1 to 5	39	20.3	102	0.1
6 to 20	28	14.6	317	0.2
21 to 50	19	9.9	612	0.3
51 to 100	19	9.9	1,459	0.8
101 to 500	44	22.9	12,082	7.0
501 to 1,000	18	9.4	11,857	6.8
Over 1,000	18	9.4	147,075	84.8
Bituminous coal	3,476	100.0	569,769	100.0
No wage earners	23	0.7		
1 to 5	600	17.3	2,162	0.4
6 to 20	939	27.0	10,183	1.8
21 to 50	575	16.5	18,988	3.3
61 to 100	466	13.4	33,820	5.9
101 to 500	693	19.9	156,523	27.5
501 to 1,000	103	3.0	73,517	12.9
Over 1,000	77	2.2	274,596	48.2
Petroleum and natural gas	4,772	100.0	39,831	100.0
No wage earners	1,324	27.7		
1 to 5	2,749	57.6	4,875	12.2
6 to 20	519	10.9	5,313	13.3
21 to 50	104	2.2	3,144	7.9
51 to 100	40	0.8	2,823	7.1
101 to 500	28	0.6	5,687	14.3
Over 500	8	0.2	17,989	45.2
Copper	158	100.0	53,143	100.0
No wage earners	8	5.1		
1 to 5	48	30.4	144	0.3
6 to 20	30	19.0	360	0.7
21 to 50	17	10.8	579	1.1
51 to 100	16	10.1	1,248	2.3
101 to 500	19	12.0	4,998	9.4
501 to 1,000	8	5.1	5,508	10.4
Over 1,000	12	7.6	40,306	75.8
Iron	173	100.0	52,230	100.0
No wage earners	4	2.3		
1 to 5	12	6.9	39	0.1
6 to 20	30	17.4	374	0.7
21 to 50	36	20.8	1,227	2.4
51 to 100	24	13.9	1,742	3.3
101 to 500	49	28.3	11,399	21.8
501 to 1,000	9	5.2	7,132	13.7
Over 1,000	9	5.2	30,317	58.0
Precious metals	2,169	100.0	37,815	100.0
No wage earners	378	17.4		
1 to 5	913	42.1	2,330	6.2
6 to 20	627	24.3	5,802	15.3
21 to 50	203	9.4	6,648	17.6
Over 50	148	6.8	23,035	60.9
Lead and zinc	950	100.0	21,603	100.0
No wage earners	133	14.0		
1 to 5	293	30.9	814	3.8
6 to 20	289	30.4	3,500	16.2
21 to 50	184	19.4	5,910	27.4
51 to 100	39	4.1	2,691	12.4
101 to 500	5	0.5	825	3.8
501 to 1,000	4	0.4	3,346	15.5
Over 1,000	3	0.3	4,517	20.9
Limestone	1,642	100.0	37,695	100.0
No wage earners	96	5.9		
1 to 5	565	34.4	1,453	3.8
6 to 20	526	32.0	6,168	16.4
21 to 50	282	17.2	9,201	24.4
51 to 100	104	6.3	7,432	19.7
Over 100	69	4.2	13,441	35.7
Granite	704	100.0	20,561	100.0
No wage earners	10	1.4		
1 to 5	199	28.3	638	3.1
6 to 20	265	37.6	3,069	14.9
21 to 50	132	18.8	4,367	21.3
51 to 100	53	7.5	3,830	18.6
Over 100	45	6.4	8,657	42.1
Phosphate rock	51	100.0	8,186	100.0
1 to 5 wage earners	2	3.9	17	0.2
6 to 20	11	21.6	179	2.2
21 to 50	11	21.6	463	5.7
51 to 100	6	11.8	1,024	12.5
Over 100	21	41.2	6,503	79.4

[1] Based on number reported for Dec. 15, 1909, or nearest representative day.

A marked distinction with respect to the degree of concentration exists between regular producing mines, quarries, and wells, on the one hand, and nonproducing properties on the other. The latter includes for the most part enterprises which are still in the development stage, as well as others which have had a product in the past but whose present operations are confined to the maintenance of the property, or to development work with a view to resuming production.

About two-thirds of all the wage earners engaged in nonproducing mining properties were employed by operators employing not exceeding 20 wage earners each. The largest enterprises in this class were represented by 12 operators employing from 101 to 500 wage earners each. On the other hand, more than one-half of all wage earners engaged in producing mines were employed by operators with a working force of 500 men or over.

Table 21 shows the distribution of operators according to the number of wage earners for producing and nonproducing properties separately.

Table 21

WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES.				NONPRODUCING ENTERPRISES.			
	Operators.		Wage earners.[1]		Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	16,667	100.0	1,065,263	100.0	3,395	100.0	21,499	100.0
No wage earners	2,187	13.1			196	5.8		
1 to 5	6,292	37.8	14,788	1.4	2,253	66.4	6,207	28.9
6 to 20	3,837	23.0	43,083	4.0	779	23.0	7,659	35.6
21 to 50	1,973	11.8	64,327	6.0	127	3.7	3,751	17.5
51 to 100	983	5.9	71,045	6.7	28	0.8	1,961	9.1
101 to 500	1,105	6.6	242,999	22.8	12	0.3	1,921	8.9
501 to 1,000	155	0.9	110,191	10.3				
Over 1,000	125	0.8	518,850	48.7				

[1] Based on number reported for Dec. 15, 1909, or nearest representative day.

Classification according to value of products.—Table 22 gives, for all mining industries and for the most important industries separately, a classification of the operators according to value of products per operator, and shows, for each class, the number of operators and the total value of products.

Table 22

INDUSTRY AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Value of products.	
	Number.	Per cent distribution.	Amount.	Per cent distribution.
All industries	19,815	100.0	$1,238,410,322	100.0
Less than $5,000	11,384	57.2	18,518,939	1.5
$5,000 to $20,000	4,276	21.5	43,997,158	3.6
$20,000 to $100,000	2,840	14.3	128,369,227	10.4
$100,000 to $1,000,000	1,251	6.3	335,247,982	27.1
$1,000,000 and over	164	0.8	712,277,016	57.5
Coal	3,695	100.0	577,142,935	100.0
Less than $5,000	1,175	31.8	2,921,829	0.6
$5,000 to $20,000	919	24.9	9,557,288	1.6
$20,000 to $100,000	885	23.9	44,005,693	7.6
$100,000 to $1,000,000	631	17.1	172,161,675	29.8
$1,000,000 and over	85	2.3	348,496,450	60.4
Anthracite coal	192	100.0	149,180,471	100.0
Less than $5,000	59	30.7	95,226	0.1
$5,000 to $20,000	24	12.5	288,261	0.2
$20,000 to $100,000	38	19.8	2,153,644	1.4
$100,000 to $1,000,000	54	28.1	21,020,422	14.1
$1,000,000 and over	17	8.9	125,622,918	84.2
Bituminous coal	3,503	100.0	427,962,464	100.0
Less than $5,000	1,116	31.9	2,826,603	0.6
$5,000 to $20,000	895	25.5	9,269,027	2.2
$20,000 to $100,000	847	24.2	41,852,049	9.8
$100,000 to $1,000,000	577	16.5	151,141,253	35.3
$1,000,000 and over	68	1.9	222,873,532	52.1
Petroleum and natural gas	7,793	100.0	185,418,684	100.0
Less than $5,000	5,446	69.9	8,890,708	4.8
$5,000 to $20,000	1,506	19.3	14,812,243	8.0
$20,000 to $100,000	638	8.2	26,924,025	14.5
$100,000 to $1,000,000	184	2.4	49,198,036	26.5
$1,000,000 and over	19	0.2	85,591,672	46.2
Copper	161	100.0	134,618,987	100.0
Less than $5,000	68	42.2	83,082	0.1
$5,000 to $20,000	32	20.0	337,175	0.2
$20,000 to $100,000	18	11.2	725,467	0.5
$100,000 to $1,000,000	22	13.7	8,708,533	6.5
$1,000,000 and over	21	13.0	124,762,730	92.7
Iron	176	100.0	$106,947,082	100.0
Less than $5,000	42	23.9	54,063	0.1
$5,000 to $20,000	34	19.3	363,050	0.3
$20,000 to $100,000	47	26.7	2,416,815	2.3
$100,000 to $1,000,000	38	21.6	14,023,823	13.1
$1,000,000 and over	15	8.5	90,089,331	84.2
Precious metals	2,282	100.0	94,123,180	100.0
Less than $5,000	1,571	68.8	1,775,238	1.9
$5,000 to $20,000	347	15.2	3,599,027	3.8
$20,000 to $100,000	208	9.1	9,226,301	9.8
$100,000 to $1,000,000	140	6.2	38,704,156	41.1
$1,000,000 and over	16	0.7	40,818,458	43.4
Lead and zinc	977	100.0	31,363,094	100.0
Less than $5,000	531	54.4	901,363	2.9
$5,000 to $20,000	231	23.6	2,407,108	7.7
$20,000 to $100,000	173	17.7	7,776,942	24.8
$100,000 to $1,000,000	38	3.9	7,339,203	23.4
$1,000,000 and over	4	0.4	12,938,478	41.2
Limestone	1,665	100.0	29,832,492	100.0
Less than $5,000	940	56.5	1,370,469	4.6
$5,000 to $20,000	401	24.1	4,177,822	14.0
$20,000 to $100,000	270	16.2	12,318,129	41.3
$100,000 to $1,000,000	54	3.2	11,966,072	40.1
Granite	707	100.0	18,997,976	100.0
Less than $5,000	276	39.0	585,023	3.1
$5,000 to $20,000	235	33.2	2,590,945	13.6
$20,000 to $100,000	149	21.1	6,415,992	33.8
$100,000 to $1,000,000	47	6.7	9,406,016	49.5
Phosphate rock	51	100.0	10,781,192	100.0
Less than $5,000	9	17.6	21,132	0.2
$5,000 to $20,000	11	21.6	106,680	1.0
$20,000 to $100,000	8	15.7	445,855	4.1
$100,000 and over	23	45.1	10,207,525	94.7

The relative importance of small-scale and large-scale production in mining can be seen from the fact that the 11,384 operators reporting products valued at less than $5,000, though they constituted 57.2 per cent of the total number of operators, reported only 1.5 per cent of the total value of products, while the 164 operators reporting products valued at more than $1,000,000, though they formed less than 1 per cent of the whole number of operators, reported 57.5 per cent of the total value of products. The degree of concentration varies in the different industries, operators reporting products of more than $1,000,000 in value contributing 92.7 per cent, as measured by value, of the copper product, 84.2 per cent of the iron ore, 84.2 per cent of the anthracite coal, 52.1 per cent of the bituminous coal, 46.2 per cent of the petroleum and natural gas, 43.4 per cent of the precious metals, and 41.2 per cent of the lead and zinc. In the phosphate rock industry which reported a total value of products of $10,781,192 there was one operator whose products were valued at more than $1,000,000. The other mining industries do not show so high a degree of concentration.

EXPENSES.

The census does not purport to furnish figures which can be used for determining profits or exact cost of production.

Table 23 shows, however, for 1909, in percentages, the distribution of expenses in producing enterprises by classes for all mining industries combined and for the most important industries separately. This table shows that for all industries combined 61.4 per cent of the total expenses were incurred for services—that is, salaries and wages—23.8 per cent for supplies, materials, and fuel, 6.1 per cent for royalties and rent of mines, and 8.7 per cent for all other purposes.

Table 23

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED FOR PRODUCING ENTERPRISES.[1]				
	Salaries.	Wages.	Supplies, materials, and fuel.	Royalties and rent of mines.	Miscellaneous.
All industries	5.1	56.3	23.8	6.1	8.7
Coal:					
Anthracite	3.2	66.3	19.2	5.7	5.6
Bituminous	5.5	74.3	12.1	3.1	5.0
Petroleum and natural gas	5.3	20.0	37.8	15.7	21.2
Copper	3.4	45.9	44.2	1.7	4.8
Iron	4.6	40.1	23.3	20.5	11.5
Precious metals	5.6	44.4	37.7	1.7	10.6
Lead and zinc	4.1	43.2	37.6	9.4	5.7
Limestone	7.2	59.0	22.0	2.0	9.7
Granite	6.6	68.6	16.6	1.2	7.0
Phosphate rock	8.0	43.3	30.4	4.7	13.6

[1] For absolute figures on which these percentages are based, see Table 7, p. 334.

As would be expected, the proportions vary considerably in the different industries. The largest percentage for services (79.8) is shown for the bituminous branch of the coal-mining industry, the smallest percentage (25.3) being reported for the petroleum and natural gas industry. The proportion for supplies, materials, and fuel varies from 44.2 per cent for the copper industry to 12.1 per cent for bituminous coal mining; the proportion for royalties and rent of mines, from 20.5 per cent for iron mining to 1.2 per cent for granite quarrying; and the proportion for miscellaneous expenses, from 21.2 per cent for the petroleum and natural gas industry to 4.8 per cent for the copper industry.

POWER.

Table 24 shows, for all mining industries and for the most important industries separately, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower. It also shows separately the number and horsepower of electric motors which were run by current generated by the same establishment.

Table 24

INDUSTRY.	PRODUCING ENTERPRISES: 1909											
	Primary power.										Electric motors run by current generated by enterprise using.	
	Aggregate horsepower.	Owned.							Electric motors operated by purchased current.			
		Total horsepower.	Steam engines.		Gas or gasoline engines.		Water wheels.					
			Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.
All industries	**4,608,253**	**4,402,554**	**70,573**	**3,786,552**	**23,296**	**518,542**	**908**	**97,460**	**4,770**	**205,699**	**14,203**	**493,721**
Coal	1,904,154	1,877,450	19,318	1,874,001	374	3,101	9	348	872	26,704	10,869	375,386
Anthracite	676,753	675,343	7,580	674,571	25	772			32	1,410	1,152	46,088
Bituminous	1,227,401	1,202,107	11,738	1,199,430	349	2,329	9	348	840	25,294	9,717	329,298
Petroleum and natural gas	1,221,969	1,221,809	36,928	746,658	21,762	475,151			6	160	454	8,589
Copper	376.464	324,178	699	303,848	71	2,325	15	18,005	819	52,286	536	25,888
Iron	346,534	342,069	3,563	326,753	27	2,651	30	12,665	55	4,465	326	13,295
Precious metals	228,244	144,502	1,074	84,953	429	9,696	704	49,853	2,142	83,742	574	16,054
Lead and zinc	110,559	107,276	2,158	94,220	214	12,987	3	69	59	3,283	361	12,048
Limestone	125,024	115,573	2,166	112,390	119	2,911	9	272	206	9,451	170	5,291
Granite	61,095	54,213	1,346	52,549	65	1,142	6	522	159	6,882	57	1,346
Phosphate rock	50,526	50,426	549	46,817	32	3,609			1	100	339	21,388

Of the total primary power used in mining, 4,402 554 horsepower, or 95.5 per cent, was owned by the mine operators, only 205,699 horsepower, all of which was electric power, being rented. The total amount of electric power used, including that generated at the mines, aggregated 699,420 horsepower. Nearly three-fourths of the total rented power was reported from the Mountain and Pacific states, where the abundance of water power and the scarcity of coal makes the transmission of electric power profitable. The ownership of water power by mine operators was insignificant, except in the production of the precious metals, which is mainly confined to the group of states above mentioned. Of the horsepower generated by gas or gasoline engines, 91.6 per cent was utilized in the petroleum and natural gas industry.

ENTERPRISES OPERATED BY GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS.

Enterprises operated by governmental and eleemosynary institutions differ in their organization and methods of management from other enterprises. They were therefore omitted from the general tabulation and are presented as a separate group. Table 25 presents the principal statistics for these enterprises grouped according to character of institution.

As shown by the following table, there were 132 of these institutions in operation in the United States in 1909. The total capital invested by them was reported as $2,003,876 and the total number of persons employed by them was 1,639, while the total value of products was reported as $1,642,801. Of the total number of enterprises reported, 125 were operated by governmental institutions. The statistics for these institutions do not include under persons employed the inmates whose services were utilized in the operation of the enterprises. They do include, however, salaried employees engaged in supervisory work and the guards or other prison officials who were employed in guarding the inmates while at work. The total value of the products reported by the penal institutions was $701,229, which represented 43 per cent of the total product reported by the entire number of enterprises operated by some governmental body.

The seven eleemosynary institutions employed 14 wage earners and reported products valued at $10,257.

Table 26 presents the same statistics as are shown in Table 25, grouped according to industry.

Table 25

	GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS: 1909			
	Total.	Governmental.		Eleemosynary.
		Penal.	Operated by hired labor.	
Number of enterprises	132	30	95	7
Number of mines and quarries	158	35	120	3
Number of wells	107	1	95	11
Capital	$2,003,876	$874,985	$1,106,291	$22,600
Expenses of operation and development	$907,401	$254,315	$649,584	$3,502
Services:				
Superintendents and managers	$70,357	$39,767	$30,590	....
Clerks and other subordinate salaried employees	$124,016	$109,203	$14,813	....
Wage earners	$322,755	$1,050	$319,413	$2,292
Miscellaneous:				
Supplies	$216,457	$46,002	$170,074	$381
Fuel and rent of power	$54,914	$30,035	$24,690	$189
Royalties and rent of mines	$24,341	$2,768	$21,273	$300
Taxes	$650	$203	$447	....
Contract work	$52,946	$2,711	$49,995	$240
Rent of offices and other sundry expenses	$40,965	$22,576	$18,289	$100
Value of products	$1,642,801	$701,229	$931,315	$10,257
Persons engaged in industry	1,639	199	1,426	14
Superintendents and managers	106	53	53	....
Clerks and other subordinate salaried employees	172	144	28	....
Wage earners, Dec. 15, 1909, or nearest representative day	1,361	2	1,345	14
Engineers, firemen, mechanics, etc	104	1	102	1
Miners, miners' helpers, quarrymen, and stonecutters	960	1	946	13
All other employees[1]	297	....	297	....
Number of wage earners employed on the 15th day of each month:				
January	393	2	383	8
February	390	2	377	11
March	493	2	479	12
April	715	2	703	10
May	839	2	830	7
June	893	2	883	8
July	876	2	867	7
August	1,020	2	1,008	10
September	1,071	2	1,067	2
October	997	2	986	9
November	763	2	751	10
December	447	2	439	6
Land controlled, acres	26,214	16,669	7,325	2,220
Owned	19,911	16,605	1,435	1,871
Held under lease	6,303	64	5,890	349
Mineral and oil land	21,667	14,136	6,570	961
Owned	15,658	14,072	680	906
Held under lease	6,009	64	5,890	55
Timber land	280	260	20	....
Other land	4,267	2,273	735	1,259
Primary horsepower	5,744	2,320	3,381	43

[1] Includes 2 boys under 16 years of age.

Table 26

INDUSTRY.	GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS: 1909											
	Number of enterprises.	Number of mines, quarries, and wells.	Persons engaged in mining industries Dec. 15, 1909.			Primary horsepower.	Capital.	Expenses of operation and development.				Value of products.
			Total.	Salaried employees.	Wage earners.			Total.	Salaries and wages.	Supplies and materials.	Miscellaneous.	
All industries	**132**	....	**1,639**	**278**	**1,361**	**5,744**	**$2,003,878**	**$907,401**	**$517,128**	**$271,371**	**$118,902**	**$1,642,801**
Coal, bituminous	2	3	95	95	....	1,285	680,652	128,394	95,073	33,321	....	401,403
Natural gas	14	107	58	17	41	636	668,150	178,177	28,248	132,327	17,602	335,618
Limestone	71	107	892	121	771	2,452	351,185	334,358	227,888	50,868	55,602	525,657
Traprock	21	23	351	21	330	962	171,690	145,837	97,236	21,146	27,455	208,190
Granite	16	17	169	20	149	299	118,849	101,787	53,116	31,691	16,980	148,814
Sandstone	8	8	74	4	70	110	13,350	18,848	15,567	2,018	1,263	23,119

As shown by the above table, most of the enterprises included in this group were engaged in the operation of stone quarries, the value of the stone produced representing 55.1 per cent of the total reported by all enterprises. Substantially all of the stone produced was utilized by the governmental body in its own construction work, very little being marketed. Table 27 further classifies the data for these institutions, by states.

The most important enterprises operated by governmental institutions were in the states of Kansas and Tennessee. The total value of the products reported from the enterprises operated by these institutions in these two states amounted to $725,601, representing 44.2 per cent of the total product of all such institutions. In Kansas the principal enterprise was a bituminous coal mine operated by the state prison, which reported 61,434 tons of coal, valued at $153,609. In like manner, in Tennessee the principal enterprise was a coal mine operated by the state government, which reported 308,937 tons of coal, valued at $245,271.

Table 27

GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS: 1909

STATE.	Number of enterprises.	Number of mines, quarries, and wells.	Persons engaged in mining industries Dec. 15, 1909.			Primary horsepower.	Capital.	Expenses of operation and development.				Value of products.
			Total.	Salaried employees.	Wage earners.			Total.	Salaries and wages.	Supplies and materials.	Miscellaneous.	
United States	**132**	....	**1,639**	**278**	**1,361**	**5,744**	**$2,003,876**	**$907,401**	**$517,128**	**$271,371**	**$118,902**	**$1,642,801**
Alabama	4	6	77	8	69	165	11,000	34,727	23,234	2,176	9,317	49,334
Connecticut	3	3	49	4	45	120	4,850	7,492	6,987	889	616	8,634
Illinois	7	8	81	20	61	521	105,075	36,328	22,623	10,541	3,164	85,831
Indiana	4	8	10	....	10	20	6,900	2,631	106	27	2,498	4,034
Kansas	6	67	71	32	39	1,381	595,600	117,623	44,192	65,086	8,345	362,879
Kentucky	7	8	66	18	48	120	47,250	31,342	21,506	5,159	4,677	41,616
Maryland	3	4	50	6	44	56	8,400	14,141	11,514	1,296	1,331	18,410
Massachusetts	14	17	173	6	167	686	148,140	78,561	61,568	13,958	3,035	99,438
Minnesota	4	4	77	5	72	112	29,100	30,456	16,553	9,067	4,836	68,785
Missouri	6	6	92	18	74	411	15,980	28,080	23,920	2,811	1,349	58,202
New Jersey	3	3	21	9	12	122	11,500	15,726	9,349	5,042	1,335	23,052
New York	10	10	125	5	120	195	35,650	28,708	24,015	3,797	896	34,254
Ohio	4	24	22	4	18	156	104,300	97,976	13,386	77,611	6,979	121,878
Pennsylvania	12	22	74	7	67	200	35,700	29,608	15,879	2,955	10,774	31,990
Tennessee	11	35	258	108	150	785	532,952	177,556	128,079	22,888	26,589	362,722
Virginia	3	6	18	7	11	44	26,635	21,143	4,048	16,403	692	25,784
Wisconsin	11	11	118	5	113	272	41,395	39,778	26,882	7,618	5,278	52,248
All other states[1]	20	23	257	16	241	378	243,449	115,525	64,287	24,047	27,191	193,710

---

[1] Includes Arkansas, California, Colorado, Delaware, Georgia, Idaho, Iowa, Maine, Nevada, New Hampshire, North Carolina, Oklahoma, Oregon, Rhode Island, and South Dakota.

CHAPTER III.

STATISTICS FOR MINES AND QUARRIES, BY STATES.

ALABAMA.

Summary.—The gross value of the products of all mines and quarries in Alabama in 1909 amounted to $24,350,667, which includes a duplication of $128,176, representing the value of coal produced by some operators and used as materials for coking by others. Thus the net value of the products was $24,222,491. Bituminous coal mining was the leading industry, with a net value of products amounting to $18,331,257, or 75.7 per cent of the total for the state. Of the net value of products of this industry, $10,649,300 represented the value of coal sold as such, $7,670,711 the value of coke made at the mines, and $11,246 the value of other products. The two industries next in importance were iron ore mining and limestone quarrying, for which products valued at $4,939,149 and $599,353, respectively, were reported.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 177 operators, 128, or 72.3 per cent, were corporations. These corporations reported 98.3 per cent of the total value of products and employed 96.1 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	177	30,795	$24,350,667	$137,574	100.0	100.0	100.0
Individual	29	751	273,558	9,433	16.4	2.4	1.1
Firm	20	447	136,056	6,803	11.3	1.5	0.6
Corporation	128	29,597	23,941,053	187,039	72.3	96.1	98.3
Bituminous coal	112	23,479	18,459,433	164,816	100.0	100.0	100.0
Individual	16	491	199,166	12,448	14.3	2.1	1.1
Firm	10	199	73,205	7,321	8.9	0.8	0.4
Corporation	86	22,789	18,187,062	211,477	76.8	97.1	98.5
Iron	25	5,666	4,939,149	197,566	100.0	100.0	100.0
Individual[1]	5	147	23,406	4,681	20.0	2.6	0.5
Corporation	20	5,519	4,915,743	245,787	80.0	97.4	99.5
Limestone	21	970	599,353	28,541	100.0	100.0	100.0
Individual	5	181	64,625	12,925	23.8	18.7	10.8
Firm	6	130	43,015	7,169	28.6	13.4	7.2
Corporation	10	659	491,713	49,171	47.6	67.9	82.0

[1] Includes 2 firms.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Out of a total of 30,795 wage earners employed in all industries, 25,546, or 82.9 per cent, were employed in the 67 establishments employing over 100 wage earners each. In bituminous coal mines 10,285 wage earners, or 43.8 per cent of the total number employed in that industry, were employed in the 6 enterprises employing over 1,000 wage earners each.

Table 2

	Incorporated.	Unincorporated.
Number of operators	128	49
Number of mines	247	55
Proprietors and firm members, total	....	76
Number performing manual labor	....	12
Salaried employees:		
Officers of corporations	154	....
Superintendents and managers	571	31
Clerks and other salaried employees	1,005	11
Wage earners, Dec. 15, 1909, or nearest representative day	29,597	1,198
Capital	$84,516,007	$565,797
Expenses of operation and development	22,063,007	379,271
Salaries—		
Officers of corporations	304,215	....
Superintendents and managers	617,938	19,054
Clerks and other salaried employees	730,310	6,836
Wages	14,006,503	251,206
Royalties and rent of mines	309,988	23,840
Taxes	179,753	5,597
Supplies and miscellaneous expenses	5,786,124	72,738
Cost of coal purchased for material	128,176	....
Value of products	23,941,053	409,614

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	218	100.0	30,795	100.0
No wage earners	1	0.5	....	....
Contract work	2	0.9	....	....
1 to 5	11	5.0	38	0.1
6 to 20	43	19.7	596	1.9
21 to 50	61	28.0	2,112	6.9
51 to 100	33	15.1	2,503	8.1
101 to 500	55	25.2	11,341	36.8
501 to 1,000	6	2.8	3,920	12.7
Over 1,000	6	2.8	10,285	33.4
Bituminous coal	137	100.0	23,479	100.0
1 to 5	6	4.4	21	0.1
6 to 20	28	20.4	373	1.6
21 to 50	38	27.7	1,297	5.5
51 to 100	21	15.3	1,637	7.0
101 to 500	34	24.8	7,062	30.1
501 to 1,000	4	2.9	2,804	11.9
Over 1,000	6	4.4	10,285	43.8
Iron	41	100.0	5,666	100.0
6 to 20	6	14.6	85	1.5
21 to 50	8	19.5	267	4.7
51 to 100	10	24.4	754	13.3
Over 100	17	41.5	4,560	80.5
Limestone	21	100.0	970	100.0
Contract work	1	4.8	....	....
6 to 20	5	23.8	79	8.1
21 to 50	10	47.6	392	40.4
Over 50	5	23.8	499	51.4

Prevailing hours of labor.—In Table 4 the producing mines and quarries, except those which employed no wage earners or were operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise, or operating unit. The table shows the percentage of the total number of enterprises falling in each group and also a percentage distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, employees worked a greater or less number of hours than those generally prevailing in the enterprise. In the mining industries of Alabama 10 hours or more per day are the usual hours of labor in a majority of the enterprises.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 212	100.0	100.0
8 hours and under	38	17.9	8.4
9 hours	45	21.2	26.2
10 hours	126	59.4	53.7
11 hours	2	0.9	0.3
12 hours	1	0.5	11.5
Bituminous coal	135	100.0	100.0
8 hours and under	31	23.0	9.2
9 hours	34	25.2	28.5
10 hours	69	51.1	47.0
12 hours	1	0.7	15.3
Iron	41	100.0	100.0
8 hours and under	3	7.3	4.6
9 hours	7	17.1	20.7
10 hours	30	73.2	73.9
11 hours	1	2.4	0.8
Limestone	20	100.0	100.0
8 hours and under	1	5.0	2.1
9 hours	3	15.0	23.6
10 hours	16	80.0	74.3

[1] Exclusive of 2 bituminous coal mines and 1 graphite mine for which number of hours was not reported.

Duplication between manufactures and mining.—Some of the operators of limestone and marble quarries and bituminous coal mines subjected the product of the mine or quarry to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufacturing and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Alabama involves a duplication of $7,918,305, of which $7,670,711 represents the value of coke made at the coal mines.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown by Table 5, was 91,924, of which 91,261 horsepower was developed by engines and water wheels owned by the enterprises using them, and 663 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Iron.	Limestone.	All other.
Primary power:					
Aggregate horsepower	91,924	54,084	31,838	3,696	2,306
Owned	91,261	53,421	31,838	3,696	2,306
Steam engines—					
Number	851	503	268	54	26
Horsepower	90,852	53,334	31,838	3,674	2,006
Gas or gasoline engines—					
Number	12	10	....	2	......
Horsepower	109	87	....	22	......
Water wheels—					
Number	1	....	....	....	1
Horsepower	300	....	....	....	300
Electric motors operated by purchased current—					
Number	15	15	....	....	......
Horsepower	663	663	....	....	......
Electric motors run by current generated by enterprise using:					
Number	397	366	6	....	25
Horsepower	12,204	11,584	50	....	570

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines; and to add to 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$14,993,631	$11,273,928	33.0
Supplies and materials	$3,667,943	$1,995,942	83.7
Royalties and rent of mines	$333,148	$195,045	70.8
Contract work	[1] $767,035	$267,279	187.0
Value of products	$22,491,204	$17,247,992	30.4
Primary horsepower	92,647	27,433	237.7

[1] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	Aggregate.	PRODUCING MINES AND QUARRIES.							Nonproducing mines, quarries, and wells.
		Total.	Bituminous coal.	Iron.	Limestone.	Sandstone.	Clay (sold as such).	All other.[1]	
Number of operators	184	177	112	25	21	6	5	8	7
Number of mines, quarries, and wells	318	302	203	52	26	8	5	8	16
Capital[2]	$87,268,431	$85,081,804	$59,602,396	$22,496,318	$1,525,894	$67,100	$36,496	$1,353,600	$2,186,627
Expenses of operation and development	**$22,508,990**	**$22,442,278**	**$16,868,435**	**$4,624,284**	**$555,566**	**$83,436**	**$22,265**	**$308,300**	**$64,112**
Services—									
Salaried officers of corporations, superintendents, and managers	$948,697	$941,207	$687,371	$176,678	$25,460	$6,220	$1,950	$43,528	$7,490
Clerks and other salaried employees	$739,986	$737,146	$560,841	$146,809	$20,146			$9,350	$2,840
Wage earners	$14,276,707	$14,257,709	$11,022,713	$2,698,948	$327,772	$46,050	$5,964	$157,262	$18,998
Miscellaneous—									
Supplies	$2,516,790	$2,492,214	$1,634,490	$718,281	$78,796	$4,224	$1,900	$54,523	$24,576
Cost of coal purchased for material	$128,176	$128,176	$128,176						
Fuel and rent of power	$1,049,318	$1,048,824	$585,984	$382,310	$46,001	$6,692	$300	$27,537	$494
Royalties and rent of mines	$333,828	$333,828	$224,829	$90,190	$9,838	$136	$7,107	$1,728	
Taxes	$185,678	$185,350	$139,448	$37,051	$2,284	$307	$2,052	$4,208	$228
Contract work	$773,785	$767,385	$751,384	$5,700	$8,271	$350	$1,680		$6,400
Rent of offices and other sundry expenses	$1,553,525	$1,550,439	$1,133,199	$368,317	$37,000	$457	$1,302	$10,164	$3,086
Value of products	**$24,350,667**	**$24,350,667**	**$18,458,433**	**$4,939,149**	**$599,363**	**$65,687**	**$27,123**	**$259,922**	
Persons engaged in industry	**$2,733**	**32,643**	**24,822**	**6,032**	**1,053**	**202**	**27**	**507**	**90**
Proprietors and officials	844	832	556	180	51	14	6	25	12
Proprietors and firm members	78	76	40	7	18	7	3	1	2
Number performing manual labor	12	11	6		3	1		1	1
Salaried officers of corporations	159	154	135	9		1	2	7	5
Superintendents and managers	607	602	381	164	33	6	1	17	6
Clerks and other salaried employees	1,027	1,016	787	186	32			11	11
Wage earners, Dec. 15, 1909, or nearest representative day	30,862	30,795	23,479	5,666	970	188	21	471	67
Above ground	10,833	10,766	6,155	3,044	970	188	21	388	67
Below ground	20,029	20,029	17,324	2,622				83	
Men 16 years of age or over	30,165	30,098	23,059	5,404	959	184	21	471	67
Above ground	10,481	10,414	5,955	2,907	959	184	21	388	67
Below ground	19,684	19,684	17,104	2,497				83	
Engineers, firemen, mechanics, etc	3,124	3,089	1,959	972	93	18		47	35
Above ground	2,625	2,590	1,587	845	93	18		47	35
Below ground	499	499	372	127					
Miners, miners' helpers, quarrymen, and stonecutters	16,729	16,700	13,478	2,391	660	43	10	118	29
Above ground	1,335	1,306		528	660	43	10	65	29
Below ground	15,394	15,394	13,478	1,863				53	
All other employees	10,312	10,309	7,622	2,041	206	123	11	306	3
Above ground	6,521	6,518	4,368	1,534	206	123	11	276	3
Below ground	3,791	3,791	3,254	507				30	
Boys under 16 years of age	697	697	420	262	11	4			
Above ground	352	352	200	137	11	4			
Below ground	345	345	220	125					
Number of wage earners employed on the 15th day of each month:									
January	29,033	28,992	22,493	5,055	752	161	26	505	41
February	27,510	27,502	21,338	4,811	748	130	26	449	8
March	28,088	28,079	21,478	5,117	821	165	26	472	9
April	27,594	27,578	20,968	5,189	799	162	26	434	16
May	26,962	26,951	20,507	5,026	820	140	27	431	11
June	26,441	26,423	20,334	4,760	762	115	21	431	18
July	27,055	27,037	20,463	5,027	909	160	22	456	18
August	27,419	27,397	20,863	5,129	827	190	19	369	22
September	28,500	28,484	21,626	5,350	916	175	22	395	16
October	29,582	29,516	22,462	5,515	903	250	23	363	66
November	29,769	29,700	22,456	5,652	960	239	23	370	69
December	31,656	31,595	24,627	5,486	919	175	21	367	61
Land controlled, acres	**880,756**	**850,972**	**776,244**	**63,226**	**2,577**	**1,211**	**1,303**	**6,411**	**29,784**
Owned	782,889	764,305	701,790	53,419	1,612	210	1,143	6,131	18,584
Held under lease	97,867	86,667	74,454	9,807	965	1,001	160	280	11,200
Mineral and oil land	686,350	660,701	599,259	52,000	2,117	1,211	1,303	4,811	25,649
Owned	589,177	574,728	525,355	42,337	1,152	210	1,143	4,531	14,449
Held under lease	97,173	85,973	73,904	9,663	965	1,001	160	280	11,200
Timber land	135,978	133,376	126,790	4,746	460			1,380	2,602
Other land	58,428	56,895	50,195	6,480				220	1,533
Primary horsepower	**92,264**	**81,924**	**54,084**	**31,836**	**3,696**	**371**	**56**	**1,880**	**330**

---

[1] Includes operators as follows: Bauxite, 1; buhrstones and millstones, 1; fuller's earth, 1; gold and silver, deep mines, 1; graphite, 2; marble, 1; pyrite, 1.

[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

ALASKA.

Summary.—While the present census was the first to make an actual canvass of the mines and quarries in Alaska, complete returns were not secured for all mining operations. Particularly is this the case in placer gold mining. In this industry there is a large transient element which moves from place to place, and many of these operators had moved away from the territory before the canvass began. The total value of products of the enterprises in this industry, canvassed by the agent of the Bureau of the Census, was 78 per cent of the total production of placer gold in the territory, as estimated by the Director of the Mint.

Statistics for all mining enterprises in the territory of Alaska, including amalgamation and concentration mills operated in connection with gold and silver mines, are presented in Table 5. This table gives statistics for all industries combined and for the principal producing enterprises separately. The most important nonproducing enterprises are also separately shown.

The total value of the products of all mining industries in Alaska in 1909 was $16,933,427. Of this amount gold and silver mining contributed $16,327,752, or 96.4 per cent. This product came principally from the placer gold mines, the gold produced at these mines having a value of $12,762,032, which represented 55.5 per cent of all placer gold produced in the United States in 1909. The value of the gold and silver produced in deep mines was $3,565,720. The industry next in importance was the production of copper, the total value of which was reported as $464,225.

In the operation of the coal mines and in the combined total for the industries shown as "All other," the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the territory under the form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 607 operators for all producing enterprises 452, or 74.5 per cent, were firms. This form of organization reported 62.2 per cent of the total value of products and employed 53.4 per cent of all wage earners. In the placer gold mines, 81.2 per cent of the value of products was reported by firms.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	607	5,956	$16,933,427	$27,897	100.0	100.0	100.0
Individual	116	923	2,056,864	17,732	19.1	15.5	12.1
Firm	452	3,183	10,532,593	23,302	74.5	53.4	62.2
Corporation	32	1,787	4,277,330	133,667	5.3	30.0	25.3
Other	7	63	66,640	9,520	1.2	1.1	0.4
Placer gold	573	4,337	12,762,032	22,272	100.0	100.0	100.0
Individual	112	888	2,010,861	17,954	19.5	20.5	15.8
Firm	444	3,137	10,367,934	23,351	77.5	72.3	81.2
Corporation	11	260	317,097	28,827	1.9	6.0	2.5
Other	6	52	66,140	11,023	1.0	1.2	0.5
Gold and silver, deep mines	12	1,297	3,565,720	297,143	100.0	100.0	100.0
Firm[1]	6	27	57,003	9,500	50.0	2.1	1.6
Corporation	6	1,270	3,508,717	584,786	50.0	97.9	98.4

[1] Includes 1 individual.

Table 2

	Incorporated.	Unincorporated.
Number of operators	32	575
Proprietors and firm members, number	...	1,418
Number performing manual labor	...	411
Salaried employees:		
Officers of corporations	27	...
Superintendents and managers	37	74
Clerks and other salaried employees	27	8
Wage earners, Dec. 15, 1909, or nearest representative day	1,787	4,169
Capital	$14,245,607	$18,854,397
Expenses of operation and development	3,350,190	9,184,249
Salaries—		
Officers of corporations	50,807	...
Superintendents and managers	75,663	149,736
Clerks and other salaried employees	26,552	7,282
Wages	1,893,575	4,236,265
Royalties and rent of mines	...	1,526,495
Taxes	6,855	...
Supplies and miscellaneous expenses	1,296,738	3,264,471
Value of products	4,277,330	12,656,097

Size of enterprises.—In Table 3 the producing mining enterprises are classified according to the number of wage earners employed per enterprise or operating unit. Of the 607 enterprises reporting, 6, employing over 100 wage earners each, reported 25.9 per cent of the total number of all wage earners; while the 176 enterprises employing from 6 to 20 wage earners reported 33.6 per cent of the total.

In the placer gold mining industry 42.3 per cent of the wage earners were employed in enterprises reporting from 6 to 20 wage earners, while in gold and silver deep mining 94.8 per cent of the wage earners were reported by the 4 enterprises reporting more than 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	607	100.0	5,956	100.0
No wage earners	81	13.3	....	....
Contract work	63	10.4	....	....
1 to 5	233	38.4	651	10.9
6 to 20	176	29.0	2,003	33.6
21 to 50	39	6.4	1,182	19.8
51 to 100	9	1.5	577	9.7
Over 100	6	1.0	1,543	25.9
Placer gold	573	100.0	4,337	100.0
No wage earners	79	13.8	....	....
Contract work	63	11.0	....	....
1 to 5	225	39.3	631	14.5
6 to 20	162	28.3	1,845	42.5
21 to 50	34	5.9	1,040	24.0
Over 50	10	1.7	821	18.9
Gold and silver, deep mines	12	100.0	1,297	100.0
No wage earners	1	8.3	....	....
1 to 5	3	25.0	4	0.3
6 to 100	4	33.3	64	4.9
Over 100	4	33.3	1,229	94.8

Persons employed in mining.—As shown by Table 5, of the total of 8,025 persons employed in mining in Alaska on December 15, 1909, or the nearest representative day, the producing gold and silver mines reported 7,173, or 89.3 per cent of the total number. Placer mining showed a total of 5,809 persons distributed as follows: Wage earners, 4,337; salaried employees, 87; proprietors and firm members, 1,385, of whom 402 performed manual labor about the mines. The deep mines gave employment to 1,364 persons, of whom 1,297 were wage earners, 44 were salaried employees, and 23 were proprietors and firm members.

Engines and power.—The detailed summary shows that the aggregate horsepower employed in producing mining enterprises was 19,039, of which 18,999 was developed by engines, water wheels and motors owned by the operators using them, and 40 horsepower by electric motors operated by purchased current. In the gold and silver deep mines, 10,502 horsepower was employed, while in placer mining 7,589 was used.

In addition to the power used by the producing enterprises 3,308 horsepower was employed by nonproducing enterprises, making a total of 22,347 horsepower employed in all enterprises in the territory.

Nonproducing enterprises.—Table 4 presents statistics comparing producing and nonproducing enterprises. In the latter are included the enterprises which were still in the development stage, as well as those which were productive in the past but whose operations in 1909 were confined to the maintenance of the property or to development work with a view to renewing production. Out of a total of 673 operators, 66, or 9.8 per cent, were of this class, and the capital invested by them in 1909 represented 30.7 per cent of the total capital invested in all mining enterprises in Alaska. The principal industries in which the nonproducing activities occurred were gold and silver and copper. Of the $14,649,160 of capital invested in all nonproducing enterprises, $6,334,220 were invested in gold and silver, deep mines, and $1,261,593 in placer mines, while $6,546,132 were invested in copper mines.

Of the total capital invested in all copper-mining properties in Alaska, nearly one half—47.9 per cent—was invested in the enterprises reported as nonproductive in 1909.

Table 4

	All enterprises.	Producing enterprises.	NONPRODUCING ENTERPRISES.	
			Number or amount.	Per cent of total.
Number of operators	673	607	66	9.8
Persons engaged in industry	8,025	7,547	478	6.0
Proprietors and firm members	1,501	1,418	83	5.5
Number performing manual labor	441	411	30	6.8
Salaried employees	219	173	46	21.0
Wage earners Dec. 15, 1909, or nearest representative day	6,305	5,956	349	5.5
Above ground	2,564	2,340	224	8.7
Below ground	3,741	3,616	125	3.3
Engineers, firemen, mechanics, etc	737	699	38	5.2
Miners and miners' helpers, quarrymen, and stonecutters	4,701	4,449	252	5.4
All other employees	867	808	59	6.8
Primary horsepower	22,347	19,039	3,308	14.8
Capital	$47,749,164	$33,100,004	$14,649,160	30.7
Expenses of operation and development	13,220,200	12,534,439	685,761	5.2
Services	6,819,850	6,439,880	379,970	5.6
Salaries	408,510	310,040	98,470	24.1
Wages	6,411,340	6,129,840	281,500	4.4
Supplies, including fuel and rent of power	2,962,956	2,725,690	177,266	6.1
Contract work	1,645,063	1,638,388	6,675	0.4
Rent of offices and other sundry expenses	1,852,331	1,730,481	121,850	6.6

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 5	Aggregate.	PRODUCING MINES AND QUARRIES.						PRINCIPAL NONPRODUCING MINES.[2]		
		Total.	Placer gold.	Gold and silver, deep mines.	Copper.	Coal.	All other.[1]	Placer gold.	Gold and silver, deep mines.	Copper.
Number of operators	673	607	573	12	11	5	6	27	23	11
Capital	$47,749,164	$33,100,004	$13,139,548	$10,649,969	$7,130,661	$581,004	$1,598,822	$1,261,593	$6,334,220	$6,546,132
Expenses of operation and development	$13,220,200	$12,534,439	$9,275,899	$2,653,658	$357,321	$56,336	$191,223	$272,392	$213,087	$159,665
Services—										
Salaried officers of corporations, superintendents, and managers	$369,876	$276,206	$151,786	$47,334	$39,857	$20,000	$17,229	$9,240	$39,375	$32,265
Clerks and other salaried employees	$38,634	$33,834	$9,602	$11,332	$11,700	...	$1,200	$2,400	...	$2,400
Wage earners	$6,411,340	$6,129,840	$4,301,467	$1,513,221	$218,476	$17,573	$79,103	$97,449	$96,876	$68,375
Miscellaneous—										
Supplies	$2,635,011	$2,461,065	$1,569,758	$721,060	$77,229	$15,400	$77,618	$66,158	$63,483	$39,854
Fuel and rent of power	$267,945	$264,625	$57,182	$195,782	$4,895	...	$6,766	...	$200	$3,000
Royalties and rent of mines	$1,527,995	$1,526,495	$1,522,976	$3,519	...	...	...	$1,500	...	...
Taxes	$7,085	$6,855	$260	$5,475	$1,042	...	$78	$230	...	...
Contract work	$1,645,063	$1,638,388	$1,538,676	$98,412	$500	...	$800	...	...	$6,675
Rent of offices and other sundry expenses	$317,251	$197,131	$124,192	$57,523	$3,622	$3,365	$9,229	$95,415	$13,153	$7,096
Value of products	$16,933,427	$16,933,427	$12,762,032	$3,565,720	$469,225	$16,450	$120,000	...	...	...
Persons engaged in industry	8,025	7,547	5,909	1,364	233	44	97	221	114	98
Proprietors and officials	1,683	1,556	1,462	50	29	7	8	64	37	17
Proprietors and firm members	1,501	1,418	1,385	23	5	4	1	57	22	2
Number performing manual labor	441	411	402	7	2	...	...	20	6	2
Salaried officers of corporations	31	27	4	12	10	1	...	...	...	4
Superintendents and managers	151	111	73	15	14	2	7	7	15	11
Clerks and other salaried employees	37	35	10	17	7	...	1	1	...	1
Wage earners Dec. 15, 1909, or nearest representative day	6,305	6,956	4,337	1,297	197	37	88	156	77	80
Above ground	2,564	2,340	1,695	459	82	34	70	111	43	46
Below ground	3,741	3,616	2,642	838	115	3	18	45	34	34
Men 16 years of age and over	6,286	5,939	4,337	1,297	181	36	88	156	77	78
Engineers, firemen, mechanics, etc.	737	699	396	270	19	4	10	17	11	7
Above ground	713	675	394	248	19	4	10	17	11	7
Below ground	24	24	2	22	...	...	...	...	...	...
Miners, miners' helpers, quarrymen, and stonecutters	4,701	4,449	3,516	738	120	18	57	116	53	69
Above ground	1,142	1,011	935	11	11	15	39	73	19	37
Below ground	3,559	3,438	2,581	727	109	3	18	43	34	32
All other employees	848	791	425	289	42	14	21	23	13	2
Above ground	693	638	366	200	37	14	21	21	13	2
Below ground	155	153	59	89	5	...	...	2	...	...
Boys under 16 years of age[3]	19	17	...	...	16	1	...	...	...	2
Number of wage earners employed on the 15th day of each month:										
January	2,353	2,254	1,006	1,093	125	4	26	9	41	38
February	2,426	2,313	1,100	1,045	117	4	47	8	44	50
March	2,605	2,494	1,243	1,043	154	5	49	11	48	41
April	3,043	2,867	1,508	1,095	167	6	91	30	76	58
May	4,392	4,165	2,688	1,210	183	2	82	67	76	70
June	5,274	5,015	3,287	1,399	206	11	112	74	79	75
July	5,332	5,071	3,381	1,350	208	20	112	85	64	76
August	5,444	5,164	3,428	1,388	221	20	107	82	90	76
September	4,760	4,525	2,793	1,406	222	20	84	63	72	68
October	2,853	2,678	1,018	1,327	201	12	120	52	56	55
November	2,331	2,170	695	1,201	185	13	76	58	55	36
December	2,247	2,085	717	1,156	148	14	50	58	60	34
Primary power:										
Aggregate horsepower	22,347	19,039	7,589	10,502	576	46	326	229	47	2,979
Owned	22,307	18,999	7,549	10,502	576	46	326	229	47	2,979
Steam engines:										
Number	539	517	477	17	10	3	10	17	2	3
Horsepower	14,196	13,903	6,887	6,227	423	46	320	164	47	82
Gas or gasoline engines:										
Number	61	50	45	...	3	...	2	2	...	6
Horsepower	737	597	544	...	47	...	6	65	...	22
Water wheels:										
Number	[4]53	[4]50	[5]12	[6]35	[7]3	...	...	...	...	3
Horsepower	7,374	4,499	118	4,275	106	...	...	...	...	2,875
Electric motors operated by purchased current:										
Number	2	2	2	...	...	...	...	...	...	...
Horsepower	40	40	40	...	...	...	...	...	...	...
Electric motors run by current generated by the enterprise using:										
Number	17	9	7	...	2	...	...	...	...	3
Horsepower	381	151	86	...	65	...	...	...	...	220

---

[1] Includes operators as follows: Garnet, 1; gypsum, 1; marble, 3; and marl, 1.
[2] Other nonproducing enterprises were reported as follows: Anthracite coal, 1; antimony, 1; marble, 1; and tin, 2.
[3] In the copper mining industry 3 boys were employed below ground, 1 in producing and 2 in nonproducing enterprises.
[4] Includes 9 water motors of 125 horsepower.
[5] Includes 5 water motors of 64 horsepower.
[6] Includes 3 water motors of 60 horsepower.
[7] Includes 1 water motor of 1 horsepower.

ARIZONA.

Summary.—The statistics for Arizona include the operation of smelters, concentrating mills, and cyaniding plants operated in connection with metalliferous mines.

The gross value of the products of all mines and quarries in Arizona in 1909 was $34,217,651, which includes a duplication of $1,370,391, representing the value of copper ore produced by some operators and used as material by others. Thus the net value of products was $32,847,260. Of this amount, the value of the products of the copper industry, including the ore produced and sold as such and the copper product of the mills and smelters operated in connection with the mines, represented $30,243,725, or 92.1 per cent. Gold and silver mining (deep mines), for which products valued at $2,170,627 were reported, ranked next to copper mining, and the only other industry of importance was the quarrying of sandstone, with products valued at $297,184. In the sandstone industry the expenses of operation and development were greater than the reported value of products. This may have been due to unprofitable mining ventures or to expenditures for development work.

In addition to the operations of the producing mines and quarries, considerable work was done in Arizona in 1909 on properties which did not report production during the year. These enterprises, with a combined capital of over $57,000,000, employed 3,990 persons on December 15, 1909, or the nearest representative day, and expended $5,111,100 during the year. Over 21 per cent of all persons engaged in mining were employed by enterprises of this class, which expended over 15 per cent of the aggregate expenditures of mining operations and development.

The nonproducing enterprises included operators as follows: Metalliferous mines, 301; asbestos, 1; placer gold, 1; and petroleum and natural gas, 1.

Character of organization.—Table 1 classifies the mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for producing enterprises distinguishing incorporated enterprises from those which are unincorporated.

As shown by Table 1, out of a total of 439 operators in Arizona, 298 were corporations. These corporations reported 98.6 per cent of the total value of products and employed 94.6 per cent of all wage earners.

Size of enterprises.—In Table 3 the mining enterprises have been classified according to the number of wage earners employed. In this table the operating unit, not the operator, has been made the basis of classification. Nonproducing enterprises are considerably more numerous than producing enterprises, but employ far fewer wage earners. In the former class, 18.9 per cent of all wage earners are employed in 3 enterprises which have from 101 to 500 wage earners each, but in the latter, 27 enterprises of this magnitude employ more than four-fifths of all the wage earners. In copper mining 9 enterprises employing over 500 wage earners give employment to nearly two-thirds of all who are employed in the industry. In gold and silver deep mining there are no enterprises having more than 500 wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per producing operator.	Operators.	Wage earners.	Value of products.
All industries	439	16,917	$34,217,651	$253,464	100.0	100.0	100.0
Individual	68	415	65,084	2,503	15.5	2.5	0.2
Firm	73	506	417,517	15,464	16.6	3.0	1.2
Corporation [1]	298	15,996	33,735,050	411,403	67.9	94.6	98.6
Producing enterprises	135	13,451	34,217,651	253,464	100.0	100.0	100.0
Individual	26	209	65,084	2,503	19.3	1.6	0.2
Firm	27	382	417,517	15,464	20.0	2.8	1.2
Corporation [1]	82	12,860	33,735,050	411,403	60.7	95.6	98.6
Nonproducing enterprises	304	3,466	....	....	100.0	100.0	......
Individual	42	206	....	....	13.8	5.9	......
Firm	46	124	....	....	15.1	3.6	......
Corporation	216	3,136	....	....	71.1	90.5	......
Copper (producing enterprises)	49	11,394	31,614,116	645,186	100.0	100.0	100.0
Individual	4	38	9,299	2,325	8.2	0.3	(2)
Firm	5	18	2,379	476	10.2	0.2	(2)
Corporation	40	11,338	31,602,438	790,061	81.6	99.5	99.9
Gold and silver, deep mines (producing enterprises)	70	1,618	2,170,627	31,009	100.0	100.0	100.0
Individual	15	99	13,821	921	21.4	6.1	0.6
Firm	17	115	140,774	8,281	24.3	7.1	6.5
Corporation [1]	38	1,404	2,016,032	53,053	54.3	86.8	92.9

[1] Includes 1 limited liability company.
[2] Less than one-tenth of 1 per cent.

Table 2

	Incorporated.[1]	Unincorporated.
Number of operators	82	53
Number of mines and quarries	189	62
Proprietors and firm members, total	....	100
Number performing manual labor	....	61
Salaried employees:		
Officers of corporations	67	....
Superintendents and managers	128	6
Clerks and other salaried employees	333	19
Wage earners, Dec. 15, 1909, or nearest representative day	12,860	591
Capital	$119,166,124	$606,657
Expenses of operation and development	28,085,300	522,916
Salaries—		
Officers of corporations	175,534	....
Superintendents and managers	392,130	10,221
Clerks and other salaried employees	424,295	16,000
Wages	13,099,136	403,624
Royalties and rent of mines	3,339	4,917
Taxes	431,127	702
Supplies and miscellaneous expenses	12,189,348	87,452
Cost of ore purchased	1,370,391	....
Value of products	33,735,050	482,601

[1] Includes 1 limited liability company.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**453**	**100.0**	**16,917**	**100.0**
No wage earners	19	4.2	....	....
Contract work	24	5.3	....	....
1 to 5	179	39.5	539	3.2
6 to 20	137	30.2	1,447	8.6
21 to 50	37	8.2	1,169	6.9
51 to 100	27	6.0	2,006	11.9
101 to 500	21	4.6	4,494	26.6
Over 500	9	2.0	7,262	42.9
Producing enterprises	**149**	**100.0**	**13,451**	**100.0**
No wage earners	8	5.4	....	....
Contract work	1	0.7	....	....
1 to 5	43	28.9	120	0.9
6 to 20	40	26.8	451	3.4
21 to 50	12	8.1	393	2.9
51 to 100	18	12.1	1,387	10.3
101 to 500	18	12.1	3,838	28.5
Over 500	9	6.0	7,262	54.0
Nonproducing enterprises	**304**	**100.0**	**3,466**	**100.0**
No wage earners	11	3.6	....	....
Contract work	23	7.6	....	....
1 to 5	136	44.7	419	12.1
6 to 20	97	31.9	996	28.7
21 to 50	25	8.2	776	22.4
51 to 100	9	3.0	619	17.9
Over 100	3	1.0	656	18.9
Copper (producing enterprises)	**57**	**100.0**	**11,394**	**100.0**
1 to 5	9	15.8	26	0.2
6 to 20	10	17.5	104	0.9
21 to 50	5	8.8	178	1.6
51 to 100	13	22.8	984	8.6
101 to 500	11	19.3	2,840	24.9
Over 500	9	15.8	7,262	63.7
Gold and silver, deep mines (producing enterprises)	**70**	**100.0**	**1,618**	**100.0**
No wage earners	8	11.4	....	....
Contract work	1	1.4	....	....
1 to 5	24	34.3	62	3.8
6 to 20	22	31.4	257	15.9
21 to 50	4	5.7	122	7.5
51 to 100	5	7.1	403	24.9
Over 100	6	8.6	774	47.8

Persons employed in mining.—There were employed on the 15th day of December, 1909, or the nearest representative day, in the mining industry of Arizona, 18,094 persons, of whom 16,917 were wage earners and 1,177 were salaried employees and proprietors and firm members. Persons engaged in mining industries represent very nearly 25 per cent of the adult males of the state.

Prevailing hours of labor.—In Table 4 all enterprises combined, and producing and nonproducing enterprises separately, except those which employed no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells were not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such a classification impracticable. The table shows the percentage of the total number of enterprises falling into each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. Where an enterprise had two operating units and reported a different number of hours per day for each, the two units have been counted as two enterprises in this table. In the copper industry all enterprises and in the gold and silver industry all but one were operated on an eight-hour basis.

Table 4

CLASS OF ENTERPRISES AND NUMBER OF HOURS PER DAY.	ENTERPRISES.		Per cent distribution of enterprises, weighted according to number of wage earners.
	Number.	Per cent distribution.	
All enterprises [1]	**409**	**100.0**	**100.0**
8 hours	394	96.3	**98.9**
9 hours	8	2.0	**0.6**
10 hours	7	1.7	**0.5**
Producing enterprises	**140**	**100.0**	**100.0**
8 hours	133	95.0	**99.4**
9 hours	6	4.3	**0.5**
10 hours	1	0.7	**0.1**
Nonproducing enterprises [1]	**269**	**100.0**	**100.0**
8 hours	261	97.0	**97.0**
9 hours	2	0.7	**1.0**
10 hours	6	2.2	**2.0**

[1] Exclusive of petroleum and natural gas wells.

Engines and power.—The aggregate horsepower employed in all enterprises, as shown by Table 5, was 55,773, of which 47,272 was used in producing enterprises and 8,501 in enterprises engaged in development work only.

Table 5

CHARACTER OF POWER.	All enterprises.	PRODUCING ENTERPRISES: 1909				Nonproducing enterprises: 1909
		Total.	Copper.	Gold and silver, deep mines.	All other.	
Primary power:						
Aggregate horsepower	**55,773**	**47,272**	**35,159**	**10,498**	**1,615**	**8,501**
Owned	51,676	43,568	33,825	9,413	330	8,108
Steam engines:						
Number	376	245	168	70	7	131
Horsepower	46,020	40,130	31,803	8,052	275	5,890
Gas or gasoline engines:						
Number	231	113	54	54	5	118
Horsepower	5,656	3,438	2,022	1,361	55	2,218
Electric motors operated by purchased current:						
Number	119	111	68	21	22	8
Horsepower	4,097	3,704	1,334	1,085	1,285	393
Electric motors run by current generated by enterprise using:						
Number	240	228	214	14	....	12
Horsepower	7,122	6,857	6,614	243	....	265

Comparison of mining industries: 1902–1909.—In order to make a comparison between the census of 1909 and the preceding census of mines and quarries, that of 1902, it is necessary to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the operation of copper smelters. In any case, only the few items specified in Table 6 can be compared for the two years.

Table 6	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$12,444,253	$5,769,248	115.7
Supplies and materials	$6,828,800	$3,060,521	123.1
Royalties and rent of mines	$8,256	$18,567	−55.5
Contract work	[2] $121,156	$159,942	−24.3
Value of products	$26,067,772	$11,197,375	132.8
Primary horsepower	35,179	11,073	217.7

[1] A minus sign (−) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the copper and sandstone industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result the combined gross value of products for the manufacturing and mining industries in Arizona involves a duplication of $24,419,315, of which $24,177,315 represents the value of copper and $242,000 the value of the sandstone.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.						NONPRODUCING MINES, QUARRIES, AND WELLS.		
		Total.	Copper.	Gold and silver, deep mines.	Sandstone.	Precious stones.	All other.[1]	Total.	Metalliferous mines.	All other.[2]
Number of operators	439	135	43	70	5	6	11	304	301	3
Number of mines, quarries, and wells	1,147	251	99	117	10	9	16	896	891	5
Capital	$176,817,826	$119,772,781	$95,317,926	$22,816,187	$389,228	$51,400	$1,198,040	$57,045,045	$57,036,644	$8,401
Expenses of operation and development	$33,719,316	$28,808,216	$25,383,528	$2,781,393	$308,771	$24,071	$110,453	$5,111,100	$5,106,028	$5,072
Services:										
Salaried officers of corporations, superintendents, and managers	$926,943	$577,885	$433,573	$119,767	$13,770	$2,975	$7,800	$349,058	$349,058	...
Clerks and other salaried employees	$545,030	$440,295	$377,242	$39,753	$20,800	...	$2,500	$104,735	$104,735	...
Wage earners	$15,969,706	$13,502,760	$11,780,348	$1,405,591	$240,663	$16,824	$59,334	$2,466,946	$2,464,164	$2,782
Miscellaneous:										
Supplies	$6,961,195	$5,559,387	$4,840,937	$683,928	$17,763	$1,714	$15,025	$1,401,828	$1,399,738	$2,090
Cost of ore purchased	$1,370,391	$1,370,391	$1,370,391	...	...	...	...	...	...	...
Fuel and rent of power	$5,945,926	$5,603,989	$5,188,802	$400,522	$9,714	...	$4,951	$341,937	$341,937	...
Royalties and rent of mines	$9,256	$8,256	$2,468	$5,613	...	...	$175	$1,000	$1,000	...
Taxes	$454,119	$431,829	$404,046	$26,176	$811	$73	$723	$22,290	$22,290	...
Contract work	$409,696	$238,982	$212,296	$10,358	...	...	$16,328	$170,714	$170,714	...
Rent of offices and other sundry expenses	$1,127,054	$874,462	$773,425	$89,685	$5,250	$2,485	$3,617	$252,592	$252,392	$200
Value of products	$34,217,851	$34,217,651	$31,614,116	$2,170,627	$297,184	$68,486	$79,238	...	...	...
Persons engaged in industry	18,094	14,104	11,845	1,764	314	29	152	3,990	3,975	15
Proprietors and officials	706	301	159	111	13	4	14	405	405	...
Proprietors and firm members	309	100	20	61	7	1	11	209	209	...
Number performing manual labor	128	61	12	45	2	...	2	67	67	...
Salaried officers of corporations	120	67	50	14	1	1	1	53	53	...
Superintendents and managers	277	134	89	36	5	2	2	143	143	...
Clerks and other salaried employees	471	352	292	35	23	...	2	119	119	...
Wage earners, Dec. 15, 1909, or nearest representative day	16,917	13,451	11,394	1,618	278	25	136	3,466	3,451	15
Above ground	6,934	5,667	4,598	641	278	22	128	1,267	1,252	15
Below ground	9,983	7,784	6,796	977	...	3	8	2,199	2,199	...
Men 16 years of age and over	16,911	13,446	11,389	1,618	278	25	136	3,465	3,450	15
Engineers, firemen, mechanics, etc	2,150	1,556	1,216	288	43	...	9	594	586	8
Above ground	1,789	1,243	930	261	43	...	9	546	538	8
Below ground	361	313	286	27	...	...	...	48	48	...
Miners, miners' helpers, quarrymen, and stonecutters	9,946	7,624	6,488	921	88	25	102	2,322	2,317	5
Above ground	797	572	347	21	88	22	94	225	220	5
Below ground	9,149	7,052	6,141	900	...	3	8	2,097	2,097	...
All other employees	4,815	4,266	3,685	409	147	...	25	549	547	2
Above ground	4,347	3,852	3,321	359	147	...	25	495	493	2
Below ground	468	414	364	50	...	...	...	54	54	...
Boys under 16 years of age	[3] 6	[3] 5	[3] 5	...	...	...	...	1	1	...
Number of wage earners employed on the 15th day of each month:										
January	14,233	12,391	10,792	1,219	246	25	109	1,842	1,842	...
February	14,576	12,597	10,896	1,262	299	31	109	1,979	1,979	...
March	14,803	12,700	10,936	1,312	317	27	108	2,103	2,103	...
April	14,777	12,497	10,723	1,306	322	27	119	2,280	2,280	...
May	15,673	13,332	11,417	1,448	326	16	125	2,341	2,341	...
June	15,278	12,847	10,976	1,432	306	17	116	2,431	2,431	...
July	14,898	12,598	10,794	1,391	290	8	115	2,300	2,300	...
August	15,080	12,879	11,184	1,315	262	8	110	2,201	2,197	4
September	15,219	12,970	11,172	1,393	292	8	105	2,249	2,246	3
October	15,749	13,267	11,618	1,254	276	8	111	2,482	2,479	3
November	15,792	13,067	11,411	1,282	251	8	115	2,725	2,710	15
December	15,670	12,909	11,264	1,258	258	13	116	2,761	2,754	7
Land controlled, acres	138,863	44,217	28,872	13,418	383	181	1,363	94,746	94,291	455
Owned	125,979	38,096	26,239	10,390	383	101	983	87,883	87,428	455
Held under lease	12,984	6,121	2,633	3,028	...	80	380	6,863	6,863	...
Mineral and oil land	132,248	38,907	23,792	13,188	383	181	1,363	93,341	92,886	455
Owned	119,269	32,791	21,159	10,165	383	101	983	86,478	86,023	455
Held under lease	12,979	6,118	2,633	3,023	...	80	380	6,863	6,863	...
Timber land	2,620	2,620	2,560	60	...	...	...	...	...	...
Other land	4,095	2,690	2,520	170	...	...	...	1,405	1,405	...
Primary horsepower	55,773	47,272	35,159	10,498	1,430	...	185	8,501	8,493	8

---

[1] Includes operators as follows: Clay, 1; fluorspar, 2; granite, 1; gypsum, 1; limestone, 2; marble, 1; placer gold, 1; quartz, 1; tungsten, 1.

[2] Includes operators as follows: Asbestos, 1; petroleum and natural gas, 1; and placer gold, 1.

[3] In the copper industry 5 boys were employed below ground.

ARKANSAS.

Summary.—The total value of the products of mines, quarries, and wells in Arkansas in 1909 was $4,603,845, and the number of persons employed in the different industries was 6,774. Bituminous coal mining, the leading industry, reported products valued at $3,508,590, which represented 76.2 per cent of the total value of products, and gave employment to 5,678 persons, or 83.8 per cent of the total number employed in all mining industries of the state in 1909. The industry next in importance was the production of bauxite, in which the value of the product in Arkansas in 1909 was equal to over one-half of the value of the world's output of bauxite. Statistics for this industry can not be shown separately without revealing the operations of an individual enterprise, which is also the case with respect to the production of granite, precious stones, whetstones, manganiferous iron ore, and phosphate rock. The value of the products of all these industries combined amounted to $565,272 in 1909, and the number of persons employed in them was 470.

In the production of bituminous coal, petroleum and natural gas, and lead and zinc, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to the expenditure of considerable sums for development work resulting in permanent improvements to the mining properties.

In addition to the activities of the producing mines, nine operators expended $15,474 in developing mining properties which did not report production in 1909.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. As shown in Table 1, out of the total of 96 operators in the state of Arkansas 52 are corporations. These corporations reported 93.1 per cent of the total value of products and employed 89.5 per cent of all wage earners. The average number of wage earners employed by corporations was 111, while the average number under other forms of organization was only 15.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage-earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	96	6,422	$4,603,845	$47,657	100.0	100.0	100.0
Individual	29	343	150,076	5,175	30.2	5.3	3.3
Firm	15	331	168,678	11,245	15.6	5.2	3.7
Corporation	52	5,748	4,285,091	82,406	54.2	89.5	93.1
Bituminous coal	44	6,462	3,506,590	79,741	100.0	100.0	100.0
Individual	5	226	84,253	16,851	11.4	4.1	2.4
Firm	10	297	143,203	14,320	22.7	5.4	4.1
Corporation	29	4,939	3,281,134	113,143	65.9	90.4	93.5

Table 2

	Incorporated.	Unincorporated.
Number of operators	52	44
Number of mines	95	51
Number of wells	62	....
Proprietors and firm members, total	....	75
Number performing manual labor	....	41
Salaried employees:		
Officers of corporations	44	....
Superintendents and managers	87	9
Clerks and other salaried employees	96	6
Wage earners, December 15, 1909, or nearest representative day	5,748	674
Capital	$6,700,708	$499,709
Expenses of operation and development	4,002,116	307,095
Salaries—		
Officers of corporations	51,910	....
Superintendents and managers	102,105	8,487
Clerks and other salaried employees	73,780	2,185
Wages	2,857,563	168,577
Royalties and rent of mines	157,125	36,865
Taxes	15,223	2,861
Supplies and miscellaneous expenses	744,410	88,120
Value of products	4,285,091	318,754

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	112	100.0	6,422	100.0
Contract work and part-time employees	4	3.6	....	....
1 to 5	30	26.8	81	1.3
6 to 20	23	20.5	276	4.3
21 to 50	21	18.8	763	11.9
51 to 100	13	11.6	841	13.1
Over 100	21	18.8	4,461	69.5
Bituminous coal	60	100.0	5,462	100.0
1 to 20	13	21.7	125	2.3
21 to 50	16	26.7	591	10.8
51 to 100	12	20.0	754	13.8
Over 100	19	31.7	3,992	73.1

Of the 112 producing enterprises reported, 21 employed more than 100 wage earners each. The total number of wage earners employed by these enterprises represented 69.5 per cent of the number employed in all enterprises, and the average number employed per enterprise was 212. In this table the operating unit, not the operator, has been made the basis of classification. The bituminous coal mining enterprises, numbering 60, employed on the average 91 wage earners, while other enterprises, 52 in number, employed on the average 18 wage earners.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a percentage distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

The large percentage of all enterprises weighted according to number of wage earners, operating on the eight-hour-per-day basis, is explained by the fact that in the coal mining industry, which employs 5,462 wage earners, or 85.1 per cent of the total number, each of the 60 enterprises was operated on this basis.

Table 4 INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises:		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries[1]	107	100.0	100.0
8 hours	63	58.9	85.2
9 hours	16	15.0	1.8
10 hours	28	26.2	13.0

[1] Exclusive of petroleum and natural gas wells.

Engines and power.—The aggregate horsepower (Table 5), employed in producing enterprises was 14,080, of which 13,970 was developed by engines owned by the enterprises and 110 by electric motors operated by purchased current.

Table 5 CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Limestone.	Trap-rock.	All other.
Primary power:					
Aggregate horsepower	**14,080**	**10,508**	**650**	**825**	**2,097**
Owned	13,970	10,508	650	825	1,987
Steam engines—					
Number	190	140	11	5	34
Horsepower	13,908	10,508	590	825	1,985
Gas or gasoline engines—					
Number	2		1		1
Horsepower	62		60		2
Electric motors operated by purchased current—					
Number	4				4
Horsepower	110				110
Electric motors run by current generated by enterprise using:					
Number	42	20	1		21
Horsepower	1,971	1,746	40		185

Comparison of mining industries: 1902–1909.—In order to make a comparison between the census of 1909 and the preceding census of mines and quarries, that of 1902, it is necessary to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. In any case, only the few items specified in Table 6 can be compared for the two years.

Table 6	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$3,325,154	$2,137,007	55.6
Supplies and materials	$585,357	$244,379	139.5
Royalties and rent of mines	$194,179	$40,818	375.7
Contract work	[1]$111,974	$860	12,920.2
Value of products	$4,764,784	$2,840,341	67.8
Primary horsepower	14,217	7,396	92.2

[1] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the enterprises engaged in the production of fuller's earth, limestone, and whetstones, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined gross value of products for the manufacturing and mining industries in Arkansas involves a duplication of $115,430.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.										Nonproducing mines, quarries, and wells.
		Total.	Bituminous coal.	Patrolaum and natural gas.	Lead and zinc.	Limestone.	Sandstone.	Traprock.	Oilstones.	Fuller's earth.	All other.[1]	
Number of operators	105	96	44	3	5	6	12	3	11	4	8	9
Number of mines, quarries, and wells	218	208	69	62	6	7	12	3	35	4	10	10
Capital[2]	$7,331,017	$7,200,417	$2,256,942	$956,333	$680,000	$294,360	$65,539	$212,304	$43,763	$130,160	$2,561,016	$130,600
Expenses of operation and development	**$4,324,685**	**$4,309,211**	**$3,630,526**	**$157,030**	**$39,583**	**$104,531**	**$47,173**	**$74,365**	**$13,342**	**$21,641**	**$221,020**	**$15,474**
Services—												
Salaried officers of corporations, superintendents, and managers	$163,222	$162,502	$109,071	$10,950	$7,792	$10,167	$2,400	$4,750	$460	$2,700	$14,212	$720
Clerks and other salaried employees	$75,965	$75,965	$56,996	$3,191	....	$3,100	$600	$7,870	....	....	$4,208	....
Wage earners	$3,031,333	$3,026,140	$2,758,127	$1,074	$19,270	$38,572	$26,982	$24,911	$3,937	$12,105	$141,162	$5,193
Miscellaneous—												
Supplies	$370,522	$368,207	$272,231	$37,389	$3,700	$18,160	$5,534	$21,287	$530	$1,996	$7,380	$2,315
Fuel and rent of power	$139,412	$138,987	$89,981	....	$2,710	$9,940	$2,724	$5,323	$221	$2,674	$25,414	$425
Royalties and rent of mines	$194,523	$193,990	$163,896	$14,272	$950	$1,353	$2,060	$4,483	$641	....	$6,335	$533
Taxes	$18,405	$18,064	$10,250	$1,768	$218	$701	$306	$187	$528	$288	$3,838	$321
Contract work	$121,475	$117,195	$26,511	$78,231	$506	....	$4,465	$860	$6,622	....	....	$4,280
Rent of offices and other sundry expenses	$209,828	$208,141	$143,463	$10,155	$4,437	$22,538	$2,102	$4,694	$403	$1,878	$18,471	$1,687
Value of products	**$4,603,845**	**$4,603,845**	**$3,506,590**	**$128,400**	**$34,610**	**$112,466**	**$76,160**	**$79,916**	**$72,714**	**$25,513**	**$565,272**	....
Persons engaged in industry	**6,774**	**6,739**	**5,678**	**14**	**101**	**144**	**130**	**140**	**35**	**27**	**470**	**35**
Proprietors and officials	226	215	135	7	9	9	14	6	14	3	18	11
Proprietors and firm members	86	75	38	....	....	3	12	1	12	1	8	11
Number performing manual labor	44	41	20	....	....	1	6	....	7	1	7	3
Salaried officers of corporations	44	44	27	4	5	3	....	2	....	1	2	....
Superintendents and managers	96	96	70	3	4	3	2	3	2	1	8	....
Clerks and other salaried employees	102	102	81	4	....	3	1	8	....	....	5	....
Wage earners, Dec. 15, 1909, or nearest representative day	6,446	6,422	5,462	3	92	132	116	126	21	24	447	24
Above ground	1,582	1,568	701	3	34	132	115	126	9	24	424	14
Below ground	4,864	4,854	4,761	....	58	....	....	....	12	....	23	10
Men 16 years of age and over	6,418	6,394	5,449	3	92	132	116	126	21	24	432	24
Above ground	1,566	1,552	700	3	34	132	115	126	9	24	409	14
Below ground	4,852	4,842	4,749	....	58	....	....	....	12	....	23	10
Engineers, firemen, mechanics, etc.	486	477	392	3	21	1	4	22	....	....	34	9
Above ground	444	435	350	3	21	1	4	22	....	....	34	9
Below ground	42	42	42	....	....	....	....	....	....	....	....	....
Miners, miners' helpers, quarrymen, and stonecutters	4,556	4,544	3,800	....	39	130	78	80	20	16	381	12
Above ground	675	673	....	....	3	130	78	80	8	16	358	2
Below ground	3,881	3,871	3,800	....	36	....	....	....	12	....	23	10
All other employees	1,376	1,373	1,257	....	32	1	33	24	1	8	17	3
Above ground	447	444	350	....	10	1	33	24	1	8	17	3
Below ground	929	929	907	....	22	....	....	....	....	....	....	....
Boys under 16 years of age	28	28	13	....	....	....	....	....	....	....	15	....
Above ground	16	16	1	....	....	....	....	....	....	....	15	....
Below ground	12	12	12	....	....	....	....	....	....	....	....	....
Number of wage earners employed on the 15th day of each month:												
January	5,307	5,307	4,840	3	29	35	61	53	2	44	240	....
February	4,680	4,677	4,192	3	29	54	62	53	2	43	239	3
March	4,298	4,295	3,681	2	33	66	60	83	12	35	323	3
April	3,260	3,260	2,674	2	29	72	81	88	15	30	269	....
May	3,420	3,414	2,789	1	29	83	90	90	17	28	287	6
June	4,312	4,305	3,607	1	33	99	123	80	21	31	310	7
July	4,799	4,792	4,060	....	29	103	125	55	18	16	386	7
August	5,469	5,466	4,736	4	29	96	123	55	11	17	395	3
September	5,738	5,730	4,914	1	73	114	119	55	6	16	432	8
October	5,980	5,968	5,099	3	88	128	116	55	4	21	454	12
November	6,089	6,077	5,253	5	92	89	84	55	4	22	473	12
December	5,937	5,925	5,151	3	88	85	87	53	4	14	440	12
Land controlled, acres	**111,852**	**110,526**	**54,686**	**46,048**	**970**	**123**	**160**	**100**	**3,604**	**2,501**	**2,334**	**1,326**
Owned	32,088	30,802	24,137	530	845	83	140	....	512	2,501	2,054	1,286
Held under lease	79,764	79,724	30,649	45,518	125	40	20	100	3,092	....	280	40
Mineral and oil land	109,460	108,534	54,359	46,048	970	123	160	80	3,524	2,341	929	926
Owned	29,791	28,905	23,885	530	845	83	140	....	432	2,341	649	886
Held under lease	79,669	79,629	30,474	45,518	125	40	20	80	3,092	....	280	40
Timber land	1,509	1,269	130	....	....	....	....	....	....	....	1,139	240
Other land	883	723	197	....	....	....	....	20	80	160	266	160
Primary horsepower	**14,260**	**14,060**	**10,506**	....	**365**	**650**	**201**	**825**	**65**	**301**	**1,145**	**180**

---

[1] Includes industries as follows: Bauxite, 2; granite, 1; manganiferous iron, 1; phosphate rock, 1; precious stones, 2; whetstones, 1.

[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

CALIFORNIA.

Summary.—Statistics for mining enterprises in the state of California include smelters, concentrating mills, and cyaniding plants operated in connection with gold and silver and copper mines.

The gross output of all mining industries in California in 1909 was valued at $63,382,454. Deducting from this amount, $2,762,660, the value of the gold and silver and copper ore sold by some establishments and used as materials by others, and the natural gas sold by some producers to others who sold it again, leaves $60,619,794 as the net value of the products. Of this amount, petroleum and natural gas contributed $29,306,185, or almost one-half. Gold and silver mining, the industry second in importance, reported products valued at $18,324,618, of which amount, $9,573,586 was produced at deep mines, and $8,751,032 at placer mines. The next industry in importance was the production of copper, the net value of which amounted to $7,463,233. California ranked fifth among the states in the total net value of all mineral products, second in the value of petroleum and natural gas, and second and fifth, respectively, in the value of gold and silver and copper produced.

In the operation of gypsum mines the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 1,329 operators for all industries combined, 587, or 44.2 per cent, were corporations. These corporations reported 91 per cent of the total value of products and employed 85 per cent of all wage earners. In the petroleum and natural gas industry 95.7 per cent of the value of products was reported by corporations.

Size of enterprises.—In Table 3 the producing mining enterprises are classified according to the number of wage earners employed per enterprise or operating unit. Of the 1,333 enterprises reported, only 44 employed over 100 wage earners each. These enterprises, however, reported 45 per cent of all wage earners. In the copper industry 7 enterprises, each of which employed over 100 wage earners, reported 85.4 per cent of the wage earners in that industry.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**1,329**	**23,358**	**$63,382,454**	**$47,692**	**100.0**	**100.0**	**100.0**
Individual	364	1,432	2,514,038	6,907	27.4	6.1	4.0
Firm	371	1,992	3,127,978	8,431	27.9	8.5	4.9
Corporation	587	19,852	57,651,197	98,213	44.2	85.0	91.0
Other	7	82	89,241	12,749	0.5	0.4	0.1
Petroleum and natural gas	**339**	**7,007**	**29,310,335**	**86,461**	**100.0**	**100.0**	**100.0**
Individual	49	166	943,566	19,256	14.5	2.4	3.2
Firm	26	66	303,559	11,675	7.7	0.9	1.0
Corporation	264	6,775	28,063,210	106,300	77.9	96.7	95.7
Gold and silver, deep mines	**395**	**6,622**	**9,690,956**	**24,584**	**100.0**	**100.0**	**100.0**
Individual	103	531	616,678	5,987	26.1	8.0	6.4
Firm	152	897	1,072,531	7,056	38.5	13.5	11.1
Corporation	136	5,146	7,976,255	58,649	34.4	77.7	82.3
Other	4	48	25,492	6,373	1.0	0.7	0.3
Placer gold	**392**	**3,073**	**8,751,032**	**22,324**	**100.0**	**100.0**	**100.0**
Individual	148	366	526,837	3,560	37.8	11.9	6.0
Firm	161	522	538,870	3,347	41.1	17.0	6.2
Corporation	83	2,185	7,685,325	92,594	21.2	71.1	87.8

Table 2

	Incorporated.	Unincorporated.
Number of operators	587	742
Number of mines and quarries	463	816
Number of wells	3,777	539
Proprietors and firm members, total		1,799
Number performing manual labor		856
Salaried employees:		
Officers of corporations	370	
Superintendents and managers	684	74
Clerks and other salaried employees	879	55
Wage earners, Dec. 15, 1909, or nearest representative day	19,852	3,506
Capital	$236,535,964	$17,041,588
Expenses of operation and development	47,564,683	5,000,595
Salaries—		
Officers of corporations	675,183	
Superintendents and managers	1,358,724	143,380
Clerks and other salaried employees	731,900	59,592
Wages	16,689,888	2,359,554
Royalties and rent of mines	2,299,982	514,277
Taxes	508,834	68,112
Supplies and miscellaneous expenses	22,929,602	1,463,590
Cost of ore purchased and of natural gas purchased and resold	2,370,570	392,090
Value of products	57,651,197	5,731,257

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	1,333	100.0	23,368	100.0
No wage earners	179	13.4		
Contract work and part-time employees	55	4.1		
1 to 5	530	39.8	1,374	5.9
6 to 20	349	26.2	3,904	16.7
21 to 50	128	9.6	4,043	17.3
51 to 100	48	3.6	3,518	15.1
Over 100	44	3.3	10,519	45.0
Petroleum and natural gas	342	100.0	7,007	100.0
No wage earners	10	2.9		
Contract work and part-time employees	50	14.6		
1 to 5	98	28.7	304	4.3
6 to 20	132	38.6	1,479	21.1
21 to 50	31	9.1	969	13.8
51 to 100	9	2.6	586	8.4
Over 100	12	3.5	3,669	52.4
Copper	14	100.0	2,510	100.0
1 to 100	7	50.0	366	14.6
Over 100	7	50.0	2,144	85.4
Gold and silver, deep mines	395	100.0	6,622	100.0
No wage earners	70	17.7		
Contract work	2	0.5		
1 to 5	162	41.0	414	6.3
6 to 20	86	21.8	967	14.6
21 to 50	46	11.6	1,362	20.6
51 to 100	13	3.3	1,040	15.7
Over 100	16	4.1	2,839	42.9
Placer gold	392	100.0	3,073	100.0
No wage earners	96	24.5		
Contract work	1	0.3		
1 to 5	197	50.3	458	14.9
6 to 20	71	18.1	774	25.2
21 to 50	18	4.6	638	20.8
Over 50	9	2.3	1,203	39.1

Persons employed in mining.—While the petroleum and natural gas industry ranks first among the mining enterprises when measured by the value of products, gold and silver holds the first place when measured by the number of persons employed, the total number employed in deep and placer mines aggregating 11,768, as compared with 8,081 engaged in the petroleum and natural gas industry. Of the total of 31,938 persons employed in all industries on December 15, 1909, or the nearest representative day, 26,978 were wage earners, 2,509 were salaried employees, and 2,451 were proprietors and firm members, of whom 1,145 performed manual labor in or about the mines.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor in each enterprise or operating unit. Petroleum and natural gas wells are not included in the table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined and for each of the principal industries a day of eight hours prevailed in over three-fourths of the enterprises weighted according to the number of wage earners.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries [1]	820	100.0	100.0
8 hours and under	603	73.5	79.9
9 hours	103	12.6	10.2
10 hours	109	13.3	9.6
11 hours	2	0.2	0.1
12 hours	3	0.4	0.1
Copper	16	100.0	100.0
8 hours	14	87.5	94.6
9 hours	2	12.5	5.4
Gold and silver, deep mines	323	100.0	100.0
8 hours and under	293	90.7	97.0
9 hours	17	5.3	2.3
10 hours	12	3.7	0.7
12 hours	1	0.3	(2)
Placer gold	295	100.0	100.0
8 hours and under	201	68.1	77.5
9 hours	29	9.8	13.7
10 hours	63	21.4	8.3
11 hours	1	0.3	0.2
12 hours	1	0.3	0.2

[1] Exclusive of petroleum and natural gas.

[2] Less than one-tenth of 1 per cent.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing mining enterprises was 162,238, of which 118,986 was developed by engines and water wheels and motors owned by the operators using them, and 43,252 horsepower by electric motors operated by purchased current. In the petroleum and natural gas industry 76,589 horsepower was employed, while in gold and silver (deep mines) 40,360 horsepower was employed.

In addition to the power used by the producing enterprises, 18,826 horsepower was employed by nonproducing enterprises, making a total of 181,064 horsepower employed in all enterprises in the state.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909											
	Total.	Petroleum and natural gas.	Copper.	Gold and silver, deep mines.	Placer gold.	Granite.	Trap-rock.	Limestone.	Sandstone.	Quicksilver.	Gypsum.	All other.
Primary power:												
Aggregate horsepower	**162,238**	**76,589**	**11,157**	**40,360**	**18,867**	**3,381**	**7,684**	**425**	**1,214**	**727**	**790**	**1,044**
Owned	118,986	76,559	3,434	27,951	3,392	2,124	1,913	260	954	727	790	882
Steam engines—												
Number	3,022	2,712	19	160	28	49	22	2	14	8	3	5
Horsepower	73,150	56,638	3,390	7,103	800	1,781	1,015	50	954	487	750	182
Gas or gasoline engines—												
Number	1,118	930	1	104	12	17	16	4	....	6	1	28
Horsepower	24,353	19,921	44	1,937	279	311	898	210	....	123	40	590
Water wheels—												
Number	[1] 520	....	....	[2] 417	[3] 89	1	....	....	....	4	....	[4] 9
Horsepower	21,483	....	....	18,911	2,313	32	....	....	....	117	....	110
Electric motors operated by purchased current—												
Number	972	3	120	265	396	26	140	7	8	....	....	7
Horsepower	43,252	30	7,723	12,409	15,475	1,257	5,771	165	260	....	....	162
Electric motors run by current generated by enterprise using:												
Number	159	6	12	93	23	8	7	....	....	9	....	1
Horsepower	4,829	100	145	3,395	625	310	60	....	....	179	....	15

[1] Includes 61 water motors of 902 horsepower.
[2] Includes 49 water motors of 805 horsepower.
[3] Includes 4 water motors of 12 horsepower.
[4] Includes 8 water motors of 85 horsepower.

Nonproducing enterprises.—Table 6 presents statistics comparing producing and nonproducing enterprises. In the latter are included the enterprises which were still in the development stage as well as those which were productive in the past but whose operations in 1909 were confined to the maintenance of the property or to development work with a view to renewing production. Out of a total of 2,021 operators, 692, or 34.2 per cent, were of this class, and the capital invested by them represented 11 per cent of the total capital invested in all mining enterprises. The principal industries in which the nonproducing activities occurred were in the production of gold and silver and petroleum and natural gas. Of the $31,260,935 of capital invested in all nonproducing enterprises, $18,100,862 was invested in gold and silver mines, of which $15,954,784 was invested in deep mines and $2,146,078 in placer mines.

Table 6

	All enterprises.	Producing enterprises.	NONPRODUCING ENTERPRISES.	
			Number or amount.	Per cent of total.
Number of operators	2,021	1,329	692	34.2
Number of mines, quarries, and wells	6,510	5,595	915	14.1
Persons engaged in industry	31,938	27,219	4,719	14.8
Proprietors and firm members, total	2,451	1,799	652	26.6
Number performing manual labor	1,145	856	289	25.2
Salaried employees	2,509	2,062	447	17.8
Wage earners, Dec. 15, 1909, or nearest representative day	26,978	23,358	3,620	13.4
Above ground	18,381	16,287	2,094	11.4
Below ground	8,597	7,071	1,526	17.8
Engineers, firemen, mechanics, etc	8,660	7,458	1,202	13.9
Miners, miners' helpers, quarrymen, and stonecutters	11,962	10,107	1,855	15.5
All other employees	6,356	5,793	563	8.9
Land controlled, acres	1,062,596	827,285	235,311	22.1
Primary horsepower	181,064	162,238	18,826	10.4
Capital	$284,838,487	$253,577,552	$31,260,935	11.0
Expenses of operation and development	61,251,185	52,565,278	8,685,907	14.2
Services	24,531,641	22,018,221	2,513,420	10.2
Salaries	3,378,805	2,968,779	410,026	12.1
Wages	21,152,836	19,049,442	2,103,394	9.9
Supplies, including fuel and rent of power	29,830,100	24,327,955	5,502,145	18.4
Contract work	783,973	595,130	188,843	24.1
Rent of offices and other sundry expenses	6,105,471	5,623,972	481,499	7.9

The total expenditure during the year by nonproducing mines was $8,685,907, or 14.2 per cent of the total expenditures by all mines and quarries. Of the total number of wage earners employed, 13.4 per cent were employed in these nonproducing enterprises. This, however, does not represent the total number of persons engaged in such industries, since persons employed in prospecting are omitted from the statistics.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the operation of copper smelters; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 7.

Table 7

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$21,430,590	$12,842,486	66.9
Supplies and materials	$20,463,053	$5,533,935	269.8
Royalties and rent of mines	$2,814,926	$685,982	310.3
Contract work	[2] $496,568	$520,894	−4.7
Value of products	$59,012,946	$28,611,307	106.3
Primary horsepower	155,115	69,532	123.1

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 8.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in California involves a duplication of $9,317,878.

	Table 8	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.							
			Total.	Petroleum and natural gas.	Copper.	Gold and silver, deep mines.	Placer gold.	Granite.	Traprock.	Limestone.
1	Number of operators	2,021	1,329	339	9	395	392	62	43	11
2	Number of mines, quarries, and wells	6,510	5,595	4,316	16	581	435	71	50	15
3	Capital	[5] $284,838,487	[5] $253,577,552	$144,176,437	$15,082,993	$38,104,583	$40,698,628	$1,756,610	$2,415,931	$424,327
4	**Expenses of operation and development**	$61,251,185	$52,565,278	$25,210,087	$7,749,834	$9,467,344	$5,608,855	$1,225,519	$1,317,489	$306,479
	Services—									
5	Salaried officers of corporations, superintendents, and managers.	[4] $2,551,869	[4] $2,177,287	$952,269	$123,322	$441,471	$268,719	$63,654	$97,554	$20,869
6	Clerks and other salaried employees	[4] $826,936	[4] $791,492	$353,526	$99,979	$102,723	$50,192	$16,922	$32,526	$4,605
7	Wage earners	$21,152,836	$19,049,442	$6,727,857	$2,398,914	$5,135,333	$2,120,827	$917,535	$658,008	$163,432
	Miscellaneous—									
8	Supplies	$24,053,469	$18,789,652	$12,532,920	$1,225,058	$2,302,615	$1,991,334	$110,740	$252,905	$65,162
9	Cost of ore purchased and natural gas purchased and resold.	$2,762,660	$2,762,660	$4,150	$2,641,140	$117,370	....	....	....	....
10	Fuel and rent of power	$3,013,971	$2,775,643	$126,766	$1,085,253	$769,969	$541,901	$45,346	$77,350	$9,331
11	Royalties and rent of mines	$2,848,061	$2,814,259	$2,460,983	$29,212	$84,791	$123,595	$22,538	$75,561	$5,752
12	Taxes	$626,456	$576,946	$276,669	$48,603	$122,656	$91,000	$9,158	$7,115	$1,301
13	Contract work	[4] $783,973	[4] $595,130	$272,633	....	$99,842	$73,054	....	$13,922	$24,641
14	Rent of offices and other sundry expenses.	[4] $2,630,954	[4] $2,232,767	$1,502,314	$98,353	$290,574	$348,233	$39,626	$102,558	$11,386
15	**Value of products**	$63,382,454	$63,382,454	$29,310,335	$10,104,373	$9,690,956	$8,751,032	$1,518,916	$1,404,401	$368,486
16	**Persons engaged in industry**	[6] 31,838	[6] 27,219	8,081	2,635	7,896	3,872	1,445	1,417	285
17	Proprietors and officials	[6] 3,934	[6] 2,927	651	33	1,173	721	104	90	19
18	Proprietors and firm members	2,451	1,799	113	....	949	589	65	22	6
19	Number performing manual labor.	1,145	856	13	....	337	421	50	2	3
20	Salaried officers of corporations	[6] 484	[6] 370	193	10	57	35	16	29	5
21	Superintendents and managers	[6] 999	[6] 758	345	23	167	97	23	39	8
22	Clerks and other salaried employees	[6] 1,026	[6] 934	423	92	101	78	23	65	22
23	Wage earners, Dec. 15, 1909, or nearest representative day.	26,978	23,358	7,007	2,510	6,622	3,073	1,318	1,262	244
24	Above ground	18,381	16,287	7,007	1,203	1,842	2,494	1,318	1,262	244
25	Below ground	8,597	7,071	....	1,307	4,780	579	....	....	....
26	Men 16 years of age and over	26,970	23,350	7,006	2,510	6,617	3,073	1,316	1,262	244
27	Engineers, firemen, mechanics, etc.	8,660	7,458	5,049	325	1,045	596	147	137	15
28	Above ground	8,391	7,238	5,049	234	955	567	147	137	15
29	Below ground	269	220	....	91	90	29	....	....	....
30	Miners, miners' helpers, quarrymen, and stonecutters.	11,962	10,107	....	1,172	4,279	1,697	956	966	192
31	Above ground	4,286	3,898	....	18	141	1,153	956	966	192
32	Below ground	7,676	6,209	....	1,154	4,138	544	....	....	....
33	All other employees	6,348	5,785	1,957	1,013	1,293	780	213	159	37
34	Above ground	5,698	5,145	1,957	951	743	774	213	159	37
35	Below ground	650	640	....	62	550	6	....	....	....
36	Boys under 16 years of age [6]	8	8	1	....	5	....	2	....	....
	Number of wage earners employed on the 15th day of each month:									
37	January	20,597	19,077	5,657	2,150	5,321	2,403	1,159	1,023	256
38	February	20,507	18,974	5,659	2,219	5,256	2,407	1,102	1,000	245
39	March	21,154	19,583	5,910	2,256	5,434	2,337	1,164	1,213	214
40	April	21,794	20,090	6,122	2,206	5,403	2,392	1,124	1,387	217
41	May	22,409	20,558	6,199	2,245	5,520	2,544	1,097	1,445	235
42	June	22,401	20,458	5,992	2,255	5,688	2,534	1,164	1,411	229
43	July	23,133	20,957	6,261	2,459	5,697	2,568	1,181	1,326	249
44	August	23,271	20,898	6,257	2,517	5,610	2,487	1,244	1,308	275
45	September	23,983	21,501	6,471	2,635	5,720	2,544	1,378	1,271	261
46	October	24,039	21,427	6,714	2,678	5,631	2,501	1,239	1,249	248
47	November	23,812	21,162	6,796	2,617	5,447	2,452	1,189	1,305	247
48	December	24,155	21,516	6,971	2,481	5,633	2,526	1,284	1,218	242
49	**Land controlled, acres**	1,062,596	827,285	455,444	9,957	108,785	123,158	7,743	6,955	1,751
50	Owned	588,234	427,112	107,074	9,877	97,019	108,741	7,062	2,389	1,454
51	Held under lease	474,362	400,173	348,370	80	11,776	14,417	681	4,566	297
52	Mineral and oil land	990,885	765,805	455,444	6,817	98,302	116,251	7,400	4,937	1,666
53	Owned	521,923	370,667	107,074	6,737	88,043	104,094	6,719	1,544	1,454
54	Held under lease	468,962	395,138	348,370	80	10,259	12,157	681	3,393	212
55	Timber land	13,305	12,545	....	....	6,702	700	73	....	....
56	Other land	58,406	48,935	....	3,140	3,791	6,207	270	2,018	85
57	**Primary horsepower**	181,064	162,238	76,589	11,157	40,360	18,867	3,381	7,684	425

---

[1] Includes operators as follows: Asphaltum and bituminous rock, 2; bituminous coal, 2; borax, 2; feldspar, 1; fuller's earth, 1; infusorial earth, 2; mineral pigments, 2; pyrite, 1; slate, 1; talc and soapstone, 1.

[2] Includes operators as follows: Asbestos, 1; bituminous coal, 1; borax, 1; clay, 2; feldspar, 1; graphite, 1; gypsum, 3; infusorial earth, 1; limestone, 1; lithium, 1; magnesite, 1; manganese, 1; marble, 3; mineral pigments, 1; molybdenum, 2; precious stones, 4; tungsten, 2.

[5] Includes $2,307,793 which could not be distributed among the several industries.

MINING INDUSTRIES: 1909.

	PRODUCING MINES, QUARRIES, AND WELLS—continued.									NONPRODUCING MINES, QUARRIES, AND WELLS.					
	Sandstone.	Marble.	Quicksilver.	Tungsten.	Precious stones.	Gypsum.	Clay (sold as such).	Magnesite.	All other.[1]	Total.	Gold and silver, deep mines.	Placer gold.	Petroleum and natural gas.	Quicksilver.	All other.[2]
1	19	6	10	3	7	5	7	6	15	692	397	85	168	15	27
2	20	15	10	9	8	12	8	13	16	915	709	116	24	25	42
3	$181,226	$514,216	$2,594,500	$134,928	$251,919	$392,968	$178,500	$89,016	$4,272,977	$31,260,935	$15,954,784	$2,146,078	$11,904,813	$846,900	$408,360
4	$263,361	$54,514	$585,166	$114,065	$68,129	$118,847	$56,114	$62,444	$357,032	$8,885,907	$1,647,820	$336,843	$6,244,528	$89,871	$87,846
5	$12,644	$2,700	$49,316	$9,301	$6,700	$12,800	$7,080	$5,338	$26,450	$374,682	$186,792	$35,286	$134,657	$7,050	$10,897
6	$5,342	....	$7,540	....	....	$5,897	$425	$2,105	$12,136	$35,444	$10,746	$775	$22,423	$900	$600
7	$155,285	$27,596	$339,375	$71,201	$41,170	$41,827	$29,408	$32,479	$189,195	$2,103,394	$997,596	$164,809	$844,707	$63,354	$32,928
8	$63,046	$15,810	$91,753	$21,010	$16,895	$16,997	$11,608	$6,282	$65,517	$5,263,817	$478,110	$105,008	$4,659,533	$9,292	$11,874
9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
10	$14,874	$702	$50,465	$3,951	....	$13,896	$540	$7,556	$27,743	$238,328	$61,136	$6,154	$168,675	$1,970	$393
11	$3,910	....	$5,268	....	....	$1,917	$279	$253	$200	$33,802	$4,813	$1,000	$27,989	....	....
12	$3,158	$969	$6,415	$124	$328	$838	$504	$252	$7,856	$49,510	$19,007	$2,888	$24,088	$2,920	$607
13	$450	....	$9,878	....	....	$12,723	$250	....	$7,113	$188,843	$58,972	$1,812	$127,044	....	$1,015
14	$4,642	$6,737	$25,155	$8,478	$3,036	$11,952	$6,020	$8,179	$20,822	$398,187	$130,748	$18,111	$235,512	$4,185	$9,631
15	$289,576	$89,467	$729,095	$191,795	$110,339	$103,846	$74,404	$68,463	$576,868	....	....	....	....	....	....
16	348	36	492	72	34	100	48	84	270	4,719	2,534	521	1,411	122	131
17	23	11	21	12	9	11	7	8	22	1,007	623	131	198	16	39
18	15	9	3	8	....	3	5	3	9	652	470	98	46	8	30
19	12	2	....	4	....	3	4	2	3	289	183	74	16	6	10
20	1	....	6	....	3	2	1	2	6	114	43	11	51	4	5
21	7	2	12	4	6	6	1	3	7	241	110	22	101	4	4
22	5	....	9	....	....	7	....	2	13	92	25	4	61	1	1
23	320	25	462	60	25	82	39	74	235	3,620	1,886	386	1,152	105	91
24	320	25	219	22	16	82	39	67	137	2,094	593	224	1,152	49	76
25	....	....	243	38	9	....	....	17	98	1,526	1,293	162	....	56	15
26	320	25	462	60	25	82	39	74	235	3,620	1,886	386	1,152	105	91
27	18	1	56	4	....	24	....	7	34	1,202	287	67	837	13	8
28	18	1	54	4	....	24	....	7	26	1,153	246	50	837	13	7
29	....	....	2	....	....	....	....	....	8	49	41	7	....	....	1
30	270	15	280	40	24	21	34	33	128	1,855	1,413	292	....	77	73
31	270	15	61	2	15	21	34	16	38	388	171	137	....	21	59
32	....	....	219	38	9	....	....	17	90	1,467	1,242	155	....	56	14
33	32	9	126	16	1	37	5	34	73	563	186	37	315	15	10
34	32	9	104	16	1	37	5	34	73	553	176	37	315	15	10
35	....	....	22	....	....	....	....	....	....	10	10	....	....	....	....
36	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
37	169	34	438	61	51	54	37	50	214	1,520	871	123	445	44	37
38	180	35	429	62	37	55	36	39	213	1,533	855	125	477	42	34
39	169	45	410	60	31	41	38	42	219	1,571	827	128	542	43	31
40	326	43	413	60	35	63	36	40	223	1,704	917	138	571	47	31
41	335	47	441	58	36	64	34	44	214	1,851	968	194	609	45	35
42	269	42	423	61	34	61	37	52	216	1,943	975	213	628	90	37
43	271	37	429	57	34	55	40	65	228	2,176	1,073	289	671	91	52
44	284	25	432	54	35	52	58	54	206	2,373	1,200	297	721	90	65
45	293	24	427	56	28	66	75	54	208	2,482	1,258	300	772	93	59
46	311	23	392	42	20	74	36	52	217	2,612	1,317	276	860	98	61
47	225	19	411	59	22	68	37	51	217	2,650	1,251	263	970	104	62
48	225	21	451	58	25	69	34	61	227	2,639	1,227	226	1,025	104	67
49	3,492	1,464	21,701	1,160	1,138	18,000	1,264	2,366	62,894	236,311	58,014	39,671	103,281	8,129	26,216
50	1,372	1,364	18,661	1,160	1,138	4,200	1,258	1,569	62,774	161,122	49,364	32,213	61,750	7,769	20,026
51	2,120	100	3,040	....	....	13,800	6	800	120	74,189	8,650	7,458	51,531	360	6,190
52	2,682	1,304	13,456	1,160	1,138	18,000	1,264	2,306	33,678	225,080	65,453	38,661	103,281	1,749	25,936
53	562	1,204	10,416	1,160	1,138	4,200	1,258	1,506	33,558	151,256	46,808	31,203	51,750	1,749	19,746
54	2,120	100	3,040	....	....	13,800	6	800	120	73,824	8,645	7,458	51,531	....	6,190
55	....	....	6,070	....	....	....	....	....	....	760	400	....	....	360	....
56	810	160	3,175	....	....	....	....	63	29,216	9,471	2,161	1,010	....	6,020	280
57	1,214	144	727	79	....	790	50	126	845	18,826	9,660	2,458	8,517	120	71

---

[1] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $77,100; clerks and other salaried employees, $97,574; and contract work, $80,624.

[2] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 106; salaried officers of corporations, 4; superintendents and managers, 8; and clerks and other salaried employees, 94.

[3] In the gold and silver (deep mines) industry, 2 boys were employed below ground.

COLORADO.

Summary.—Table 7 shows that the gross value of the products of all mines, quarries, and wells in Colorado in 1909 was $45,680,135. Deducting from this amount, $4,930,144, the value of the gold and silver ore and coal sold by some mines and used as material by others, leaves $40,749,991 as the net value of the products, which gives Colorado the rank of ninth in importance among the states in mining. The principal industries were metalliferous deep mines, producing gold, silver, copper, lead and zinc; and bituminous coal mines. The value of the products of these two industries, after deducting the ore purchased by the metalliferous mines and the coal purchased for coke making by the bituminous coal mines, was $38,177,900, which represented 93.7 per cent of the products of all mines, quarries, and wells in the state. Of the total for the two industries, $22,657,178 represented the value of the products of the metalliferous deep mines and $15,520,722 the value of the products of the coal industry. Of this latter amount, $12,222,061 represented the value of bituminous coal, $3,296,590 the value of coke made at the mines, and $2,071 the value of other products. Placer gold mining, the industry next in importance, reported products valued at $448,586. Of the other industries, tungsten mining, with products valued at $332,067, was the most important. This amount represents 58.9 per cent of the total of $563,457 produced in the United States. The production of tungsten is a comparatively new industry in the United States, as the total value of the product which was reported in 1902 was $5,975, produced in the states of Colorado and Connecticut.

In two industries, the production of petroleum and natural gas and the production of granite, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work, resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. As shown by Table 1, 58.9 per cent of all operators of producing enterprises were corporations. These corporations reported 94.7 per cent of the value of products of the state and employed 93.1 per cent of all wage earners. In the bituminous coal mining industry 97.3 per cent of the value of the products were produced and 97.7 per cent of the wage earners were employed by corporations.

Table 1	PRODUCING ENTERPRISES: 1909						
INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**672**	**24,769**	**$45,680,135**	**$67,976**	**100.0**	**100.0**	**100.0**
Individual	156	1,019	1,473,134	9,443	23.2	4.1	3.2
Firm	117	681	938,546	8,022	17.4	2.7	2.1
Corporation	396	23,053	43,255,616	109,231	58.9	93.1	94.7
Other	3	16	12,839	4,280	0.4	0.1	(1)
Metalliferous deep mines	**453**	**7,688**	**27,325,847**	**60,322**	**100.0**	**100.0**	**100.0**
Individual	93	708	1,145,686	12,319	20.5	9.2	4.2
Firm [2]	84	314	509,580	6,066	18.5	4.1	1.9
Corporation	276	6,667	25,670,581	93,009	60.9	86.7	93.9
Bituminous coal	**86**	**15,461**	**15,782,197**	**183,514**	**100.0**	**100.0**	**100.0**
Individual	12	114	115,282	9,607	14.0	0.7	0.7
Firm [3]	8	236	304,851	38,106	9.3	1.5	1.9
Corporation	66	15,111	15,362,064	232,759	76.7	97.7	97.3

[1] Less than one-tenth of 1 per cent.
[2] Includes 2 cooperative associations.
[3] Includes 1 cooperative association.

Table 2	Incorporated.	Unincorporated.
Number of operators	396	276
Number of mines and quarries	1,102	473
Number of wells	62	14
Proprietors and firm members, total		647
Number performing manual labor		232
Salaried employees:		
Officers of corporations	240	
Superintendents and managers	486	38
Clerks and other salaried employees	582	21
Wage earners, Dec. 15, 1909, or nearest representative day	23,053	1,716
Capital	$137,752,832	$6,886,726
Expenses of operation and development	36,511,759	2,118,529
Salaries—		
Officers of corporations	444,496	
Superintendents and managers	946,262	51,111
Clerks and other salaried employees	656,405	14,666
Wages	17,361,513	1,101,783
Royalties and rent of mines	787,011	230,436
Taxes	620,746	22,226
Supplies and miscellaneous expenses	10,865,182	698,307
Cost of coal and ore purchased for material	4,930,144	
Value of products	43,255,616	2,424,519

Size of enterprises.—In Table 3 all producing mining industries combined and metalliferous deep mines and bituminous coal mines separately are classified by the number of wage earners employed. In this table the operating unit, not the operator, has been made the basis of classification. Of the 722 producing enterprises only 56 employed more than 100 wage earners each. These enterprises, however, employed 15,707 wage earners, or 63.4 per cent of the number of wage earners employed in all enterprises.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	722	100.0	24,769	100.0
No wage earners	44	6.1		
Contract work and part-time employees	94	13.0		
1 to 5	232	32.1	678	2.7
6 to 20	163	22.6	1,763	7.1
21 to 50	82	11.4	2,768	11.2
51 to 100	51	7.1	3,853	15.6
Over 100	56	7.8	15,707	63.4
Metalliferous deep mines	463	100.0	7,669	100.0
No wage earners	28	6.0		
Contract work	78	16.8		
1 to 5	162	35.0	456	5.9
6 to 20	121	26.1	1,295	16.8
21 to 50	44	9.5	1,507	19.6
51 to 100	15	3.2	1,076	14.0
Over 100	15	3.2	3,355	43.6
Bituminous coal	126	100.0	15,461	100.0
Contract work	1	0.8		
1 to 5	13	10.3	44	0.3
6 to 20	18	14.3	220	1.4
21 to 50	24	19.0	873	5.6
51 to 100	31	24.6	2,424	15.7
Over 100	39	31.0	11,900	77.0

Persons employed in mining.—While metalliferous mining was the leading industry in 1909 when measured by the value of products, bituminous coal mining ranks first when the number of persons employed is considered. Out of a total of 26,783 persons employed in producing mines, 16,166, or 60.4 per cent, were employed in coal mines, and only 8,789 in metalliferous mines.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

The table shows a marked difference in the number of hours persons are employed in the two leading industries. In the metalliferous deep mines in 97.4 per cent of the enterprises weighted according to number of wage earners, 8 hours and under were the prevailing hours of labor, while in the bituminous coal industry the corresponding per cent was 28.7, 61 per cent of the enterprises in this industry being run on a 10-hour per day basis.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries [1]	576	100.0	100.0
8 hours and under	433	75.3	49.9
9 hours	34	5.9	8.4
10 hours	96	16.7	41.6
12 hours	12	2.1	0.2
Metalliferous deep mines	357	100.0	100.0
8 hours and under	332	93.0	97.4
9 hours	3	0.8	0.8
10 hours	10	2.8	1.1
12 hours	12	3.4	0.8
Bituminous coal	125	100.0	100.0
8 hours and under	58	46.4	28.7
9 hours	22	17.6	10.3
10 hours	45	36.0	61.0

[1] Exclusive of petroleum and natural gas.

Engines and power.—The aggregate horsepower employed in producing enterprises as shown by Table 5 was 98,777, of which 74,501 was developed by engines and water wheels owned by the enterprises using them and 24,276 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Metalliferous deep mines.	Bituminous coal.	Petroleum and natural gas.	All other.
Primary power:					
Aggregate horsepower	98,777	56,413	34,085	2,472	5,807
Owned	74,501	36,189	32,139	2,472	3,701
Steam engines—					
Number	931	369	404	112	46
Horsepower	65,996	29,469	32,132	2,397	1,998
Gas or gasoline engines—					
Number	27	17	2	4	4
Horsepower	407	272	7	75	53
Water wheels—					
Number	[1] 61	[1] 47			14
Horsepower	8,098	6,448			1,650
Electric motors operated by purchased current—					
Number	694	605	52		37
Horsepower	24,276	20,224	1,946		2,106
Electric motors run by current generated by enterprise using:					
Number	372	80	281		11
Horsepower	14,829	3,798	9,816		1,215

[1] Includes 1 water motor of 75 horsepower.

Comparison of mining industries: 1902–1909.—Only the few items specified in Table 6 can be compared for the two years, 1909 and 1902.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$19,959,195	$21,518,169	−7.2
Supplies and materials	$7,273,927	$6,969,796	4.4
Royalties and rent of mines	$1,017,847	$1,064,653	−4.4
Contract work	[2] $123,828	$393,985	−68.6
Value of products	$39,397,859	$40,508,286	−2.7
Primary horsepower	98,777	83,039	19.0

[1] A minus sign (−) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines; and to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909.

Duplication between manufactures and mining.—In four industries, granite and sandstone quarrying, and gypsum and bituminous coal mining, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Colorado involves a duplication of $3,484,491.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.										Non-producing mines, quarries, and wells.[2]
		Total.	Metalliferous deep mines.	Placer gold.	Bituminous coal.	Petroleum and natural gas.	Tungsten.	Limestone.	Sandstone.	Granite.	All other.[1]	
Number of operators	1,010	672	453	9	86	23	17	9	35	15	25	338
Number of mines, quarries, and wells	3,065	1,651	1,177	37	155	76	105	9	39	17	36	1,414
Capital	[3]$170,439,166	[3]$144,639,558	$105,310,930	$1,444,926	$28,919,137	$1,469,800	$1,252,500	$434,613	$668,916	$169,425	$3,348,289	$25,799,608
Expenses of operation and development	**$41,060,260**	**$38,630,288**	**$22,317,780**	**$261,632**	**$14,279,495**	**$328,130**	**$214,380**	**$315,942**	**$172,477**	**$79,441**	**$661,031**	**$2,429,972**
Services:												
Salaried officers of corporations, superintendents, and managers	[4]$1,713,422	[4]$1,441,869	$828,833	$22,000	$413,970	$13,724	$13,400	$8,121	$9,040	$7,591	$46,711	$271,653
Clerks and other salaried employees	[4]$705,298	[4]$671,071	$292,403	$3,900	$298,330	$175	$3,240	$3,722	$1,385	$1,500	$16,438	$34,227
Wage earners	$19,663,445	$18,463,296	$6,981,226	$78,655	$10,383,766	$117,927	$81,584	$232,553	$124,074	$41,121	$422,390	$1,200,149
Miscellaneous:												
Supplies	$5,958,739	$5,459,666	$3,474,930	$69,945	$1,601,712	$116,312	$61,275	$59,912	$9,606	$11,392	$54,582	$499,073
Cost of ore and coal purchased for material	$4,930,144	$4,930,144	$4,668,669	...	$261,475	...	...	...	...	...	...	...
Fuel and rent of power	$2,066,943	$1,955,984	$1,543,668	$47,266	$303,980	$28,721	$3,752	$4,802	$2,600	$4,616	$16,579	$110,959
Royalties and rent of mines	$1,018,123	$1,017,447	$545,982	$4,373	$430,136	$8,295	$1,375	$1,329	$4,564	$5,900	$15,493	$676
Taxes	[4]$572,511	[4]$542,972	$366,642	$13,111	$133,126	$8,140	$2,729	$1,801	$928	$383	$9,757	$29,539
Contract work	$3,145,334	$2,996,083	$2,935,178	...	$9,139	$2,951	$40,976	...	$1,750	$672	$5,417	$149,251
Rent of offices and other sundry expenses	[4]$1,286,301	[4]$1,151,756	$680,229	$22,382	$443,861	$31,885	$6,049	$3,702	$18,530	$6,266	$73,664	$134,545
Value of products	**$45,680,135**	**$45,680,135**	**$27,325,947**	**$448,586**	**$15,782,197**	**$317,680**	**$332,067**	**$331,408**	**$189,780**	**$78,865**	**$873,705**	...
Persons engaged in industry	**[5]29,455**	**[5]26,783**	**8,689**	**134**	**16,166**	**151**	**119**	**412**	**243**	**118**	**665**	**2,672**
Proprietors and officials	[5]2,168	[5]1,411	778	25	417	23	28	8	43	18	40	757
Proprietors and firm members	1,204	647	362	15	165	16	23	2	36	12	16	557
Number performing manual labor	318	232	164	8	10	3	16	...	19	3	10	86
Salaried officers of corporations	[5]287	[5]240	144	2	73	2	...	1	1	...	5	47
Superintendents and managers	[5]677	[5]524	272	8	179	5	5	5	6	6	19	153
Clerks and other salaried employees	[5]651	[5]603	222	3	288	2	5	4	3	2	19	48
Wage earners, Dec. 15, 1909, or nearest representative day	26,636	24,769	7,689	106	15,461	126	86	400	197	98	606	1,867
Above ground	8,471	8,004	3,154	102	3,400	126	16	400	197	98	511	467
Below ground	18,165	16,765	4,535	4	12,061	...	70	...	...	...	95	1,400
Men 16 years of age and over	26,575	24,709	7,688	106	15,404	126	86	398	197	98	606	1,866
Engineers, firemen, mechanics, etc	2,757	2,485	1,337	33	966	85	4	17	11	4	28	272
Above ground	2,392	2,131	1,179	33	770	85	4	17	11	4	28	261
Below ground	365	354	158	...	196	...	...	...	...	...	...	11
Miners, miners' helpers, quarrymen, and stonecutters	16,746	15,292	4,470	59	9,647	...	70	355	156	88	447	1,454
Above ground	1,508	1,400	371	55	...	...	...	355	156	88	375	108
Below ground	15,238	13,892	4,099	4	9,647	...	70	...	...	...	72	1,346
All other employees	7,072	6,932	1,881	14	4,791	41	12	26	30	6	131	140
Above ground	4,544	4,447	1,603	14	2,607	41	12	26	30	6	108	97
Below ground	2,528	2,485	278	...	2,184	...	...	...	...	...	23	43
Boys under 16 years of age[6]	61	60	1	...	57	...	...	2	...	...	...	1
Number of wage earners employed on the 15th day of each month:												
January	22,639	21,853	6,609	33	14,043	110	60	368	113	54	463	786
February	21,999	21,198	6,458	60	13,582	112	60	384	125	59	388	801
March	22,045	21,193	6,535	71	13,327	109	54	406	162	61	468	852
April	21,311	20,410	6,566	81	12,536	116	62	324	186	65	474	901
May	21,228	20,190	6,765	98	11,859	117	67	331	200	77	676	1,038
June	21,470	20,260	6,795	100	11,703	117	72	383	233	85	772	1,210
July	21,776	20,387	6,987	95	11,707	121	69	374	239	95	700	1,389
August	22,163	20,808	6,942	97	12,344	120	74	411	224	88	508	1,355
September	22,994	21,701	6,820	94	13,370	127	74	363	187	83	583	1,293
October	24,053	22,765	7,032	82	14,246	124	74	383	200	74	550	1,288
November	24,444	23,138	7,025	67	14,650	122	66	402	185	62	559	1,306
December	25,221	23,892	7,089	44	15,396	122	77	400	124	80	560	1,329
Land controlled, acres	300,028	213,875	38,649	7,477	113,636	31,223	5,124	1,765	8,751	1,735	5,515	86,153
Owned	191,254	150,082	33,461	4,468	84,915	7,416	5,106	1,725	7,895	1,175	3,921	41,172
Held under lease	108,774	63,793	5,188	3,009	28,721	23,807	18	40	856	560	1,594	44,981
Mineral and oil land	270,834	186,413	35,391	7,477	92,942	31,223	3,994	1,765	7,866	1,735	4,020	84,421
Owned	163,392	123,872	30,235	4,468	65,101	7,416	3,976	1,725	7,050	1,175	2,726	39,520
Held under lease	107,442	62,541	5,156	3,009	27,841	23,807	18	40	816	560	1,294	44,901
Timber land	1,115	912	12	...	400	...	...	...	...	...	500	203
Other land	28,079	26,550	3,246	...	20,294	...	1,130	...	885	...	995	1,529
Primary horsepower	110,180	98,777	56,413	1,491	34,085	2,472	367	325	330	189	3,105	11,403

---

[1] Includes operators as follows: Anthracite coal, 2; clay, 9; fluorspar, 2; fuller's earth, 1; graphite, 1; grindstones, 1; gypsum, 4; iron, 1; manganiferous iron, 1; marble, 2; mica, 1.

[2] Includes operators as follows: Asphaltum and bituminous rock, 1; bituminous coal, 2; fluorspar, 1; gold and silver, deep mines, 321; marble, 1; molybdenum, 1; placer gold, 2; petroleum and natural gas, 2; slate, 1; tungsten, 4; uranium, 1; vanadium, 1.

[3] Includes $1,621,123, which could not be distributed among the several industries.

[4] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $78,479; clerks and other salaried employees, $49,978; and taxes, $6,355.

[5] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 86; salaried officers of corporations, 12; superintendents and managers, 19; and clerks and other salaried employees, 55.

[6] In the bituminous coal industry 34 of the boys are employed below ground.

CONNECTICUT.

Summary.—The total value of the products of all mines and quarries in Connecticut in 1909 was $1,375,765, of which the stone industry, comprising the quarrying of granite, traprock, and sandstone reported $1,168,447, or 84.9 per cent.

In the feldspar industry and in the aggregate for the three industries shown under "All other" in Table 7 the expenses of operation and development exceeded the total value of the products. This may have been due to unprofitable mining ventures or to expenditures for development work resulting in improvements to the mining properties.

Character of organization.—Tables 1 and 2 present statistics classifying the mining operations of the state under form of organization.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**71**	**1,690**	**$1,375,765**	**$19,377**	**100.0**	**100.0**	**100.0**
Individual	36	372	315,357	8,760	50.7	22.0	22.9
Firm	16	164	126,907	7,932	22.5	9.7	9.2
Corporation	19	1,154	933,501	49,132	26.8	68.3	67.9
Granite	**38**	**868**	**617,667**	**16,254**	**100.0**	**100.0**	**100.0**
Individual	23	230	142,956	6,215	60.5	26.5	23.1
Firm	9	107	88,508	9,834	23.7	12.3	14.3
Corporation	6	531	386,203	64,367	15.8	61.2	62.5
Traprock	**16**	**317**	**359,020**	**22,439**	**100.0**	**100.0**	**100.0**
Individual and firm[1]	9	102	127,646	14,183	56.2	32.2	35.6
Corporation	7	215	231,374	33,053	43.8	67.8	64.4

[1] Includes 7 individuals and 2 firms.

Table 2

	Incorporated.	Unincorporated.
Number of operators	19	52
Number of mines and quarries	20	55
Proprietors and firm members, total		76
Number performing manual labor		29
Salaried employees:		
Officers of corporations	7	
Superintendents and managers	25	17
Clerks and other salaried employees	28	8
Wage earners, Dec. 15, 1909, or nearest representative day	1,154	536
Capital	$2,696,237	$268,205
Expenses of operation and development	798,984	359,507
Salaries—		
Officers of corporations	16,000	
Superintendents and managers	29,347	13,764
Clerks and other salaried employees	19,190	4,383
Wages	516,654	212,723
Royalties and rent of mines	2,596	14,175
Taxes	15,614	2,043
Supplies and miscellaneous expenses	199,583	112,419
Value of products	933,501	442,264

Out of a total of 71 enterprises 19 were corporations. These corporations reported 67.9 per cent of the total value of products and employed 68.3 per cent of all wage earners. In the granite industry the corresponding percentages were 62.5 and 61.2, respectively.

Size of enterprises.—In Table 3 the mining enterprises of the state have been classified according to the number of wage earners employed. Of the 71 enterprises only 4 employed more than 100 wage earners each. These enterprises, however, employed 694 wage earners, or 41.1 per cent of the total number employed in all enterprises.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**71**	**100.0**	**1,690**	**100.0**
No wage earners	2	2.8		
Contract work	1	1.4		
1 to 5	17	23.9	54	3.2
5 to 20	33	46.5	350	20.7
21 to 50	11	15.5	358	21.2
51 to 100	3	4.2	234	13.8
Over 100	4	5.6	694	41.1
Granite	**38**	**100.0**	**868**	**100.0**
No wage earners	1	2.6		
1 to 5	12	31.6	44	5.1
6 to 20	17	44.7	181	20.9
21 to 50	4	10.5	126	14.5
Over 50	4	10.5	517	59.6
Traprock	**16**	**100.0**	**317**	**100.0**
1 to 20	10	62.5	95	30.0
Over 20	6	37.5	222	70.0

Prevailing hours of labor.—In Table 4 all mines and quarries, except those employing no wage earners and one operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. As appears from the table, a majority of all enterprises are operated on a 10-hour basis. Of the total number of enterprises, weighted according to the number of wage earners, 60.4 per cent were operated on this basis. For granite and traprock quarrying, the two leading industries, the corresponding percentages were, respectively, 45.9 and 95.6.

Table 4 INDUSTRY AND HOURS PER DAY.	ENTERPRISES.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	68	100.0	100.0
8 hours	13	19.1	22.0
9 hours	18	26.5	17.6
10 hours	37	54.4	60.4
Granite	37	100.0	100.0
8 hours	13	35.1	42.9
9 hours	9	24.3	11.3
10 hours	15	40.5	45.9
Traprock	16	100.0	100.0
9 hours	2	12.5	4.4
10 hours	14	87.5	95.6

Engines and power.—As shown by Table 5 the aggregate horsepower employed in mining enterprises in Connecticut in 1909 was 6,298, of which 6,123 horsepower was developed by engines and water wheels owned by the enterprises using them and 175 by electric motors operated by purchased current.

Table 5 CHARACTER OF POWER.	Total.	Granite.	Traprock.	Sandstone.	All other.
Primary power:					
Aggregate horsepower	6,298	2,227	2,167	963	941
Owned	6,123	2,227	1,992	963	941
Steam engines—					
Number	144	83	24	24	13
Horsepower	6,032	2,197	1,992	963	880
Gas or gasoline engines—					
Number	3	2			1
Horsepower	41	30			11
Water wheels—					
Number	2				2
Horsepower	50				50
Electric motors operated by purchased current—					
Number	3		3		
Horsepower	175		175		
Electric motors run by current generated by enterprise using:					
Number	1				1
Horsepower	10				10

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1902 figures, statistics for enterprises operated by governmental institutions, and to add to the 1909 statistics, figures for the production of lime which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6. The principal increases in the value of products were in the value of the sandstone, which increased from $128,579 to $191,760, and in siliceous crystalline rock, consisting of granite and traprock, which increased from $812,141 to $976,687.

Table 6	1909	1902	Per cent of increase.[1]
Wages and salaries	$1,000,409	$900,614	11.1
Supplies and materials	$474,711	$223,813	112.1
Royalties and rent of mines	$20,176	$17,855	13.0
Contract work	[2] $13,121		
Value of products	$1,928,965	$1,372,144	40.6
Primary horsepower	6,468	7,965	−18.8

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In three industries, the mining of feldspar and quartz and the quarrying of granite, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Connecticut involves a duplication of $535,927, of which $449,134 represents the value of the granite reported, $46,793 the value of the feldspar, and $40,000 the value of the quartz.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Total.	Granite.	Traprock.	Sandstone.	Quartz.	Feldspar.	All other.[1]
Number of operators	71	38	16	7	3	4	3
Number of mines and quarries	75	40	18	7	3	4	3
Capital	[2] $2,964,442	$1,340,171	$216,849	$671,695	$162,725	$69,890	$258,500
Expenses of operation and development	**$1,158,491**	**$547,406**	**$284,792**	**$123,368**	**$41,527**	**$64,059**	**$97,340**
Services—							
Salaried officers of corporations, superintendents, and managers	$59,111	$25,368	$15,173	$10,580	$2,340	$3,250	$2,400
Clerks and other salaried employees	$23,573	$14,317	$7,061	$210	$420	$965	$600
Wage earners	$729,377	$401,747	$126,100	$76,966	$18,450	$30,510	$75,604
Miscellaneous—							
Supplies	$127,424	$38,536	$49,380	$9,505	$2,900	$19,683	$7,420
Fuel and rent of power	$71,917	$31,937	$18,168	$8,280	$2,500	$2,230	$8,802
Royalties and rent of mines	$16,771	$905	$9,999	$10	$1,200	$4,657	
Taxes	$17,657	$3,317	$1,783	$11,278	$196	$458	$625
Contract work	$13,761	$1,600	$640		$11,521		
Rent of offices and other sundry expenses	$98,900	$29,678	$56,488	$6,539	$2,000	$2,306	$1,889
Value of products	**$1,375,765**	**$617,667**	**$359,020**	**$191,760**	**$51,521**	**$60,104**	**$95,683**
Persons engaged in industry	**1,851**	**956**	**354**	**229**	**56**	**79**	**177**
Proprietors and officials	125	68	27	15	4	4	7
Proprietors and firm members	76	46	13	10	1	2	4
Number performing manual labor	29	22	2	3		1	1
Salaried officers of corporations	7	3		4			
Superintendents and managers	42	19	14	1	3	2	3
Clerks and other salaried employees	36	20	10	1	1	3	1
Wage earners, Dec. 15, 1909, or nearest representative day	1,690	868	317	213	51	72	169
Above ground	1,545	868	317	213	51	72	24
Below ground (all men 16 years of age and over)	145						145
Men 16 years of age and over	1,680	858	317	213	51	72	169
Engineers, firemen, mechanics, etc. (all above ground)	168	88	32	30	7	6	5
Miners, miners' helpers, quarrymen, and stonecutters	1,287	661	235	170	14	47	160
Above ground	1,142	661	235	170	14	47	15
Below ground	145						145
All other employees (all above ground)	225	109	50	13	30	19	4
Boys under 16 years of age (all above ground)	10	10					
Number of wage earners employed on the 15th day of each month:							
January	757	328	93	90	33	59	154
February	690	309	73	64	33	57	154
March	984	436	160	140	39	56	153
April	1,394	705	200	193	51	76	169
May	1,556	796	261	212	51	83	153
June	1,734	862	360	227	51	81	153
July	1,749	924	331	217	47	76	154
August	1,761	954	372	207	3	71	154
September	1,757	944	387	200	7	67	152
October	1,681	887	369	180	7	69	169
November	1,517	776	336	183	6	63	153
December	1,044	466	211	142	7	64	154
Land controlled, acres	**3,878**	**1,308**	**749**	**362**	**1,133**	**203**	**123**
Owned	2,171	919	634	362	133		123
Held under lease	1,707	389	115		1,000	203	
Mineral land	3,239	1,149	476	155	1,133	203	123
Owned	1,571	790	370	155	133		123
Held under lease	1,668	359	106		1,000	203	
Timber land	80	80					
Other land	559	79	273	207			
Primary power	**6,268**	**2,227**	**2,187**	**963**	**450**	**370**	**121**

[1] Includes operators as follows: Bluestone, 1; infusorial earth, 1; iron, 1.

[2] Includes $244,712 which could not be distributed among the several industries.

DELAWARE.

Summary.—Only nine operators of mines and quarries were reported in Delaware in 1909. Six of these were engaged in quarrying granite and three in mining clay. The total value of the granite produced was $453,284, while the value of the clay produced and sold as such was $62,929. The total number of persons engaged in the two industries was 671. This total was composed of 628 wage earners, 34 salaried employees, and 9 proprietors and firm members. Statistics for the clay produced and used by the producer in the manufacture of clay products are not included in the statistics of mines and quarries.

Comparison of mining industries: 1902–1909.—Table 1 presents for 1909 and 1902 such items as are comparable for the two years.

Table 1	1909	1902	Per cent of increase.[1]
Wages and salaries	$287,742	$250,669	14.8
Supplies and materials	$178,432	$45,361	293.4
Royalties and rent of mines	$4,392	$16,187	−72.9
Contract work	$5,800	....	....
Value of products	$516,213	$448,467	15.1
Primary horsepower	1,480	1,396	6.0

[1] A minus sign (−) denotes decrease.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 2	Total.	Granite.	Clay (sold as such).
Number of operators	9	6	3
Number of mines and quarries	9	6	3
Capital	$959,078	$869,722	$89,356
Expenses of operation and development	$508,937	$448,733	$60,204
Services—			
Salaried officers of corporations, superintendents, and managers	$61,900	$57,000	$4,900
Clerks and other salaried employees	$8,115	$7,115	$1,000
Wage earners	$217,727	$198,678	$19,049
Miscellaneous—			
Supplies	$152,054	$133,850	$18,204
Fuel and rent of power	$26,378	$24,388	$1,990
Royalties and rent of mines	$4,392	$2,129	$2,263
Taxes	$1,624	$1,149	$475
Contract work	$5,800	....	$5,800
Rent of offices and other sundry expenses	$30,947	$24,424	$6,523
Value of products	$516,213	$453,284	$62,929
Persons engaged in industry	671	596	75
Proprietors and officials	30	19	11
Proprietors and firm members	9	4	5
Number performing manual labor	4	1	3
Salaried officers of corporations	6	6	....
Superintendents and managers	15	9	6
Clerks and other salaried employees	13	11	2
Wage earners, Dec. 15, 1909, or nearest representative day (all above ground)	628	566	62
Men 16 years of age and over	625	564	61
Engineers, firemen, mechanics, etc	61	57	4
Miners, miners' helpers, quarrymen, and stonecutters	476	458	18
All other employees	88	49	39
Boys under 16 years of age	3	2	1
Number of wage earners employed on the 15th day of each month:			
January	196	139	57
February	235	179	56
March	391	329	62
April	534	473	61
May	554	490	64
June	631	566	65
July	641	575	66
August	722	653	69
September	693	626	67
October	614	542	72
November	449	383	66
December	257	204	53
Land controlled, acres	642	126	516
Owned	628	112	516
Held under lease	14	14	....
Mineral land	282	126	156
Owned	268	112	156
Held under lease	14	14	....
Timber land	24	....	24
Other land	336	....	336
Primary horsepower	1,480	1,160	320

FLORIDA.

Summary.—Statistics for the producing mining enterprises in the state of Florida are presented at the close of this chapter in Table 6, which gives statistics for all industries combined and for each industry separately. Development work on nonproductive mining properties was unimportant in Florida during 1909. There were only two operators engaged exclusively in such work and the total number of persons employed was only 70.

The production of phosphate rock was the only mining industry of any considerable importance. The value of the products of this industry was $8,488,801, which represented 96 per cent of the value of the products of all mines and quarries in the state and 78.7 per cent of the value of all phosphate rock produced in the United States in 1909 ($10,781,192). The production of fuller's earth, valued at $203,236, was the industry next in importance. In this industry Florida also ranked first among the states, reporting 64.4 per cent of the total value of products for this industry in the country ($315,762). Clay mining and limestone quarrying, the only other industries, reported products valued, respectively, at $125,601 and $29,027. In these two industries the expenses of operation and development exceeded the value of the products. This may have been due to unprofitable mining ventures or to the expenditure of a considerable sum for development work for permanent improvements.

Character of organization.—As shown by Table 1, out of 36 operators of producing enterprises in the state of Florida, 32 were corporations. These corporations reported 96.3 per cent of the total value of products and employed 96.6 per cent of the wage earners.

Table 1	Incorporated.	Unincorporated.
Number of operators	32	4
Number of mines and quarries	91	5
Proprietors and firm members	...	9
Salaried employees:		
Officers of corporations	52	...
Superintendents and managers	108	4
Clerks and other salaried employees	136	4
Wage earners, Dec. 15, 1909, or nearest representative day	5,299	184
Capital	$20,582,022	$212,879
Expenses of operation and development	5,770,490	139,042
Salaries—		
Officers of corporations	181,085	...
Superintendents and managers	177,189	7,920
Clerks and other salaried employees	126,749	2,816
Wages	2,277,954	72,900
Royalties and rent of mines	184,936	12,856
Taxes	69,962	531
Supplies and miscellaneous expenses	2,752,615	42,019
Value of products	8,522,593	324,072

Size of enterprises.—In Table 2 the producing mining enterprises of the state are classified according to the number of wage earners employed. Of the 5,483 wage earners employed in all industries, 4,519, or 82.4 per cent, were employed in the 16 phosphate rock enterprises employing over 100 wage earners each.

Table 2 INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	36	100.0	5,483	100.0
6 to 20	3	8.3	44	0.8
21 to 50	9	25.0	293	5.3
51 to 100	8	22.2	627	11.4
Over 100	16	44.4	4,519	82.4
Phosphate rock	26	100.0	5,105	100.0
6 to 20	1	3.8	16	0.3
21 to 50	4	15.4	155	3.0
51 to 100	5	19.2	415	8.1
Over 100	16	61.5	4,519	88.5

Prevailing hours of labor.—In Table 3 all producing mines and quarries have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprises.

Table 3 INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises, weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1]35	100.0	100.0
9 hours	1	2.9	0.4
10 hours	20	57.1	57.4
11 hours	3	8.6	10.0
12 hours	11	31.4	32.2
Phosphate rock	[1]25	100.0	100.0
10 hours	13	52.0	56.9
11 hours	2	8.0	9.1
12 hours	10	40.0	33.9

[1] Exclusive of 1 enterprise for which the number of hours was not reported.

Engines and power.—The aggregate horsepower employed in producing enterprises as shown by Table 4 was 42,366, all of which was developed by engines owned by the operators.

Table 4 CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Phosphate rock.	Fuller's earth.	Clay.	Limestone.
Primary power (all owned): Total	**42,366**	**41,047**	**640**	**570**	**109**
Steam engines—					
Number	434	403	19	10	2
Horsepower	38,894	37,584	640	570	100
Gas or gasoline engines—					
Number	22	21			1
Horsepower	3,472	3,463			9
Electric motors run by current generated by enterprise using:					
Number	220	219	1		
Horsepower	12,315	12,300	15		

Comparison of mining industries: 1902–1909.—In order to make a comparison between the census of 1909 and the preceding census of mines and quarries, that of 1902, it is necessary to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. In any case, only the few items specified in Table 5 can be compared for the two years.

The total increase from 1902 to 1909 in the value of the products of mines and quarries was $5,971,375, or over 200 per cent. Substantially all of this increase was in the value of the phosphate rock, which increased from $2,655,463 in 1902 to $8,488,801 in 1909.

Table 5	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$2,870,113	$1,310,898	118.9
Supplies and materials	$1,992,490	$618,057	222.4
Royalties and rent of mines	$197,792	$131,493	50.4
Contract work	$217,691	$4,021	5,313.9
Value of products	$8,915,181	$2,943,806	202.8
Primary horsepower	42,376	10,357	309.1

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 6	PRODUCING MINES AND QUARRIES.				
	Total.	Phosphate rock.	Fuller's earth.	Clay (sold as such).	Limestone.
Number of operators	36	26	3	4	3
Number of mines and quarries	96	81	8	4	3
Capital [1]	$20,794,901	$19,584,310	$454,429	$668,192	$87,970
Expenses of operation and development	**$6,909,532**	**$5,694,258**	**$162,057**	**$128,782**	**$34,435**
Services—					
Salaried officers of corporations, superintendents, and managers	$366,194	$334,934	$12,760	$13,900	$4,600
Clerks and other salaried employees	$129,565	$123,615	$3,570	$1,300	$1,080
Wage earners	$2,350,854	$2,210,919	$71,963	$50,663	$17,309
Miscellaneous—					
Supplies	$738,946	$676,596	$22,034	$35,223	$5,093
Fuel and rent of power	$1,223,035	$1,173,118	$25,728	$20,393	$3,796
Royalties and rent of mines	$197,792	$194,925		$2,667	$200
Taxes	$70,493	$67,118	$1,330	$1,536	$509
Contract work	$217,691	$217,624	$67		
Rent of offices and other sundry expenses	$614,962	$595,409	$14,605	$3,100	$1,848
Value of products	**$8,846,666**	**$8,488,801**	**$203,238**	**$125,601**	**$29,027**
Persons engaged in industry	**6,798**	**6,380**	**205**	**147**	**64**
Proprietors and officials	173	146	10	9	8
Proprietors and firm members	9	4			5
Salaried officers of corporations	52	42	5	4	1
Superintendents and managers	112	100	5	5	2
Clerks and other salaried employees	140	129	6	3	2
Wage earners, Dec. 15, 1909, or nearest representative day	5,483	5,105	189	135	54
Above ground	5,431	5,053	189	135	54
Below ground	52	52			
Men 16 years of age and over	5,479	5,103	189	135	52
Engineers, firemen, mechanics, etc	796	742	28	15	11
Above ground	796	742	28	15	11
Persons engaged in industry—Continued.					
Wage earners, Dec. 15, 1909—Continued.					
Men 16 years of age and over—Continued.					
Miners, miners' helpers, and quarrymen	2,640	2,524	50	35	31
Above ground	2,588	2,472	50	35	31
Below ground	52	52			
All other employees	2,043	1,837	111	85	10
Above ground	2,043	1,837	111	85	10
Boys under 16 years of age	4	2			2
Number of wage earners employed on the 15th day of each month:					
January	5,697	5,292	218	135	52
February	5,640	5,239	215	135	51
March	5,638	5,257	194	135	52
April	5,437	5,050	210	135	42
May	5,432	5,035	213	132	52
June	5,412	5,046	189	133	44
July	5,502	5,114	201	143	44
August	5,426	5,046	199	135	46
September	5,366	4,986	195	135	50
October	5,224	4,842	194	135	53
November	5,296	4,883	213	146	54
December	5,300	4,914	189	143	54
Land controlled, acres	**270,167**	**263,277**	**1,208**	**4,865**	**817**
Owned	263,147	256,957	1,208	4,665	317
Held under lease	7,020	6,320		200	500
Mineral land	178,371	172,521	1,208	4,125	517
Owned	171,431	166,281	1,208	3,925	17
Held under lease	6,940	6,240		200	500
Timber land	88,501	87,461		740	300
Other land	3,295	3,295			
Primary horsepower	**42,366**	**41,047**	**640**	**570**	**109**

---

[1] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

GEORGIA.

Summary.—The total value of the products of the mining industries in Georgia in 1909 was $2,874,595. Of this amount, granite and marble quarrying, the two leading industries, contributed, respectively, products valued at $852,610 and $767,349, or a total of $1,619,959. The production of iron ore, the industry third in importance, reported products valued at $331,178.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**92**	**4,014**	**$2,874,595**	**$31,248**	**100.0**	**100.0**	**100.0**
Individual	21	305	150,357	7,160	22.8	7.6	5.2
Firm	17	595	386,860	22,756	18.5	14.8	13.5
Corporation	54	3,114	2,337,378	43,285	58.7	77.6	81.3
Granite	**32**	**1,334**	**852,610**	**26,644**	**100.0**	**100.0**	**100.0**
Individual	10	196	118,822	11,882	31.3	14.7	13.9
Firm	10	458	347,084	34,708	31.3	34.3	40.7
Corporation	12	680	386,704	32,225	37.5	51.0	45.4
Iron	**11**	**815**	**331,178**	**30,107**	**100.0**	**100.0**	**100.0**
Firm[1]	5	153	22,854	4,571	45.5	18.8	6.9
Corporation	6	662	308,324	51,387	54.5	81.2	93.1

[1] Includes 2 individuals.

Table 2

	Incorporated.	Unincorporated.
Number of operators	54	38
Number of mines and quarries	70	39
Proprietors and firm members, total		58
Number performing manual labor		12
Salaried employees:		
Officers of corporations	45	
Superintendents and managers	72	11
Clerks and other salaried employees	59	8
Wage earners, Dec. 15, 1909, or nearest representative day	3,114	900
Capital	$11,190,272	$285,438
Expenses of operation and development	1,679,037	385,199
Salaries—		
Officers of corporations	58,190	
Superintendents and managers	79,526	9,172
Clerks and other salaried employees	39,574	3,444
Wages	969,334	308,825
Royalties and rent of mines	49,308	9,409
Taxes	12,096	1,140
Supplies and miscellaneous expenses	471,009	53,209
Value of products	2,337,378	537,217

Out of a total of 92 operators, 54 were corporations. These corporations reported 81.3 per cent of the total value of products and employed 77.6 per cent of all wage earners. In the granite quarrying industry less than one-half of the products were reported by corporations, while in the iron industry the corporations reported nine-tenths of the total product.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 4,014 wage earners employed in all enterprises, 1,740, or 43.3 per cent, were reported by the nine enterprises employing over 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**94**	**100.0**	**4,014**	**100.0**
Contract work	1	1.1		
1 to 5	12	12.8	41	1.0
6 to 20	26	27.7	350	8.7
21 to 50	37	39.4	1,214	30.2
51 to 100	9	9.6	669	16.7
Over 100	9	9.6	1,740	43.3
Granite	**32**	**100.0**	**1,334**	**100.0**
1 to 5	4	12.5	10	0.7
6 to 20	5	15.6	73	5.5
21 to 50	18	56.3	621	46.6
Over 50	5	15.6	630	47.2
Iron	**13**	**100.0**	**815**	**100.0**
1 to 50	7	53.8	210	25.8
Over 50	6	46.2	605	74.2

Prevailing hours of labor.—In Table 4 all producing enterprises, except one operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	**93**	**100.0**	**100.0**
8 hours	18	19.4	25.1
9 hours	6	6.5	12.9
10 hours	65	69.9	55.9
11 hours	1	1.1	1.0
12 hours	3	3.2	5.0
Granite	**32**	**100.0**	**100.0**
8 hours	16	50.0	70.1
9 hours	3	9.4	4.6
10 hours	12	37.5	22.1
11 hours	1	3.1	3.1
Iron	**13**	**100.0**	**100.0**
9 hours	1	7.7	0.5
10 hours	11	84.6	81.5
12 hours	1	7.7	18.0

The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day.

For all industries combined a day of 10 hours prevailed in slightly over one-half of the enterprises weighted according to the number of wage earners. In the granite quarries a day of 8 hours and in the iron mines a day of 10 hours generally prevailed.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 10,698, of which all but 268 horsepower was developed by engines and water wheels owned by enterprises using them.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Granite.	Iron.	Marble.	All other.
Primary power:					
Aggregate horsepower	**10,698**	**2,224**	**3,496**	**1,187**	**3,791**
Owned	10,430	1,956	3,496	1,187	3,791
Steam engines—					
Number	182	40	41	29	72
Horsepower	9,268	1,956	3,496	1,057	2,759
Gas or gasoline engines—					
Number	5			2	3
Horsepower	62			30	32
Water wheels—					
Number	12			1	11
Horsepower	1,100			100	1,000
Electric motors operated by purchased current—					
Number	3	3			
Horsepower	268	268			
Electric motors run by current generated by enterprise using:					
Number	3	2			1
Horsepower	80	50			30

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement, and to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$1,495,562	$1,276,362	17.2
Supplies and materials	$415,841	$556,229	—25.2
Royalties and rent of mines	$59,317	$42,008	41.2
Contract work	[2] $1,187	$122,619	—99.0
Value of products	$2,924,741	$3,080,287	—5.0
Primary horsepower	10,848	9,373	15.7

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries in Georgia involves a duplication of $892,556.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	PRODUCING MINES AND QUARRIES.									
	Totel.	Granite.	Marble.	Limestone.	Iron.	Placer gold.	Clay (sold as such).	Bauxite.	Mineral pigments.	All other.[1]
Number of operators	92	32	5	3	11	8	10	6	4	13
Number of mines and quarries	109	36	9	3	18	8	10	6	4	15
Capital	$11,475,710	$559,107	$2,234,204	$103,400	$4,018,392	$865,000	$748,904	$631,861	$171,551	$2,143,291
Expenses of operation and development	**$2,064,236**	**$682,305**	**$325,429**	**$12,987**	**$304,529**	**$20,031**	**$129,016**	**$86,311**	**$45,939**	**$456,689**
Services—										
Salaried officers of corporations, superintendents, and managers	$146,888	$25,755	$32,100	$2,000	$25,610	$2,570	$18,643	$10,885	$6,982	$22,343
Clerks and other salaried employees	$43,018	$9,939	$9,446		$9,260		$2,463	$2,400	$1,200	$8,310
Wage earners	$1,278,159	$508,834	$156,388	$8,334	$156,558	$12,670	$65,525	$54,070	$20,788	$294,992
Miscellaneous—										
Supplies	$254,021	$41,490	$55,916	$1,460	$40,665	$245	$18,388	$9,045	$8,620	$78,192
Fuel and rent of power	$146,666	$32,725	$26,851	$110	$34,525	$400	$14,782	$4,988	$2,912	$29,373
Royalties and rent of mines	$58,717	$13,130	$22,778	$333	$18,468	$1,130	$1,034	$1,258	$586	
Taxes	$13,236	$2,056	$1,678	$650	$3,065	$1,100	$1,282	$691	$533	$2,181
Contract work	$1,903	$187				$1,716				
Rent of offices and other sundry expenses	$121,628	$48,189	$20,272	$100	$16,378	$200	$6,899	$2,974	$5,318	$21,298
Value of producta	**$2,874,595**	**$852,610**	**$767,349**	**$15,080**	**$331,178**	**$19,633**	**$172,248**	**$100,701**	**$60,742**	**$555,054**
Persona engaged in industry	**4,267**	**1,410**	**476**	**40**	**862**	**58**	**251**	**261**	**117**	**793**
Proprietors and officials	186	55	17	3	32	12	19	14	10	24
Proprietors and firm members	58	32		1	8	9	2		1	5
Number performing manual labor	12	8				2	1			1
Salaried officers of corporations	45	9	5		7		10	7	2	5
Superintendents and managers	83	14	12	2	17	3	7	7	7	14
Clerks and other salaried employees	67	21	11		15		5	3	1	11
Wage earners, Dec. 15, 1909, or nearest representative day	4,014	1,334	447	37	815	46	227	244	106	758
Above ground	3,537	1,334	447	37	750	43	227	244	106	349
Below ground	477				65	3				409
Men 16 years of age and over	3,862	1,301	447	37	788	46	223	239	106	675
Engineers, firemen, mechanics, etc. (all above ground)	373	70	81	3	101	11	18	19	3	67
Miners, miners' helpers, quarrymen, and stonecutters	2,221	812	205	34	358	35	164	197	13	403
Above ground	1,834	812	205	34	293	32	164	197	13	84
Below ground	387				65	3				319
All other employees	1,268	419	161		329		41	23	90	205
Above ground	1,255	419	161		329		41	23	90	192
Below ground	13									13
Boys under 16 years of age[2]	152	33			27		4	5		83
Number of wage earners employed on the 15th day of each month:										
January	3,220	1,149	454	34	604	25	167	129	37	731
February	3,184	1,140	442	34	613	25	161	138	46	685
March	3,318	1,249	440	36	491	23	177	140	67	695
April	3,271	1,256	415	41	428	25	170	155	80	701
May	2,793	808	434	40	380	26	179	176	71	679
June	3,279	1,218	445	38	427	28	172	167	77	707
July	3,406	1,315	433	35	418	35	168	187	93	722
August	3,605	1,366	443	45	506	34	173	244	100	694
September	3,598	1,328	424	35	527	41	170	242	86	745
October	3,530	1,275	412	38	551	38	172	221	96	727
November	3,615	1,241	405	34	603	38	173	247	103	771
December	3,772	1,294	447	25	734	39	164	234	100	735
Land controlled, acres	**136,129**	**2,361**	**7,921**	600	73,683	16,004	**2,957**	**12,992**	**290**	**19,431**
Owned	132,028	1,825	7,856	480	72,273	15,804	2,656	11,503	200	19,431
Held under lease	4,101	526	65	20	1,410	200	301	1,489	90	
Mineral land	124,945	1,426	7,921	500	70,570	9,480	2,695	12,842	290	19,221
Owned	121,254	900	7,856	480	69,160	9,280	2,654	11,503	200	19,221
Held under lease	3,691	626	65	20	1,410	200	41	1,339	90	
Timber land	4,446	510				3,524	262	150		
Other land	6,738	415			3,113	3,000				210
Primary horsepower	**10,698**	**2,224**	**1,167**	**20**	**3,496**	**1,065**	**733**	**366**	**216**	**1,403**

---

[1] Includes operators as follows: Asbestos, 1; barytes, 1; bituminous coal, 2; fuller's earth, 2; gold and silver, deep mines, 1; graphite, 2; pyrite, 2; slate, 1; talc and soapstone, 1.

[2] In the bituminous coal industry 77 boys were employed below ground.

IDAHO.

Summary.—Out of a total of 174 producing operators engaged in mining in 1909, 156 reported the production of gold and silver. The total value of the products of these enterprises was $8,147,345, which represented 94.2 per cent of the value of the products of all mines and quarries ($8,649,342).

In the aggregate production of placer gold the expenses of operation and development exceeded the value of the products, a result which indicates either that certain enterprises were operated at a loss, or that a considerable sum was expended for development work, which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of 174 operators of producing enterprises in the state, 75 were organized as corporations. These corporations reported 88.9 per cent of the total value of the products of the state and employed 90.4 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	174	3,592	$6,649,342	$49,709	100.0	100.0	100.0
Individual[1]	64	136	112,309	1,755	36.8	3.8	1.3
Firm	35	210	851,809	24,337	20.1	5.8	9.8
Corporation	75	3,246	7,685,224	102,470	43.1	90.4	88.9
Gold and silver, deep mines	60	3,077	7,926,602	132,110	100.0	100.0	100.0
Individual	13	49	29,710	2,285	21.7	1.6	0.4
Firm	5	135	791,101	158,220	8.3	4.4	10.0
Corporation	42	2,893	7,105,791	169,186	70.0	94.0	89.6
Placer gold	96	313	220,743	2,299	100.0	100.0	100.0
Individual[1]	47	71	71,441	1,520	49.0	22.7	32.4
Firm	26	61	37,664	1,449	27.1	19.5	17.1
Corporation	23	181	111,638	4,854	24.0	57.8	50.6

[1] Includes 1 cooperative association.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed. Out of a total of 174 enterprises only 6 employed more than 100 wage earners each. These enterprises, however, employed 62 per cent of all wage earners. For gold and silver deep mines the average number of wage earners employed per enterprise was 51, while for placer mines the corresponding average was less than 4.

Table 2

	Incorporated.	Unincorporated.
Number of operators	75	99
Number of mines and quarries	232	138
Proprietors and firm members, total		169
Number performing manual labor		115
Salaried employees:		
Officers of corporations	24	
Superintendents and managers	85	6
Clerks and other salaried employees	63	1
Wage earners, Dec. 15, 1909, or nearest representative day	3,246	346
Capital	$48,352,454	$540,434
Expenses of operation and development	6,589,696	609,067
Salaries—		
Officers of corporations	43,015	
Superintendents and managers	211,336	14,900
Clerks and other salaried employees	85,897	2,730
Wages	3,701,040	344,507
Royalties and rent of mines	20,762	6,870
Taxes	139,201	18,944
Supplies and miscellaneous expenses	2,388,445	221,116
Value of products	7,685,224	964,118

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	174	100.0	3,592	100.0
No wage earners	42	24.1		
Contract work	2	1.1		
1 to 5	66	37.9	157	4.4
6 to 20	40	23.0	475	13.2
21 to 50	13	7.5	431	12.0
51 to 100	5	2.9	303	8.4
Over 100	6	3.4	2,226	62.0
Gold and silver, deep mines	60	100.0	3,077	100.0
No wage earners	3	5.0		
1 to 5	18	30.0	52	1.7
6 to 20	19	31.7	246	8.0
21 to 50	10	16.7	351	11.4
51 to 100	5	8.3	303	9.8
Over 100	5	8.3	2,125	69.1
Placer gold	96	100.0	313	100.0
No wage earners	36	37.5		
Contract work	1	1.0		
1 to 5	42	43.8	84	26.8
Over 5	17	17.7	229	73.2

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter percentage does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

In 74 enterprises a day of eight hours prevailed. These enterprises employed 91.7 per cent of the wage earners reported in all enterprises.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1]128	100.0	100.0
8 hours and under	74	57.8	91.7
9 hours	11	8.6	1.9
10 hours	35	27.3	4.1
11 hours	2	1.6	0.7
12 hours	6	4.7	1.7

[1] Exclusive of 2 enterprises for which number of hours per day was not reported.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown by Table 5, was 26,278, of which 16,945 horsepower was developed by engines and water wheels or motors owned by the enterprises using them and 9,333 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909			
	Total.	Gold and silver, deep mines.	Placer gold.	All other.
Primary power:				
Aggregate horsepower	26,278	23,646	1,647	985
Owned	16,945	14,663	1,597	685
Steam engines—				
Number	54	34	15	5
Horsepower	2,610	1,755	505	350
Gas or gasoline engines—				
Number	11	8	....	3
Horsepower	207	173	....	34
Water wheels—				
Number	[1]71	61	[1]8	2
Horsepower	14,128	12,735	1,092	301
Electric motors operated by purchased current—				
Number	137	134	2	1
Horsepower	9,333	8,983	50	300
Electric motors run by current generated by enterprise using:				
Number	53	53	....	....
Horsepower	1,428	1,428	....	....

[1] Includes 4 water motors of 1,000 horsepower.

Development work.—In addition to the operations of producing enterprises, considerable development work was in progress on mining properties which did not report production in 1909. Table 6 presents statistics showing the relation between the producing and nonproducing enterprises.

Table 6

	All enterprises.	Producing enterprises.	NONPRODUCING ENTERPRISES.	
			Number or amount.	Per cent of total.
Number of operators	890	174	716	80.4
Number of mines and quarries	2,431	370	2,061	84.8
Persons engaged in industry	6,959	3,940	3,019	43.4
Proprietors and firm members	871	169	702	80.6
Number performing manual labor	297	115	182	61.3
Salaried employees	374	179	195	52.1
Wage earners, Dec. 15, 1909, or nearest representative day	5,714	3,592	2,122	37.1
Above ground	1,497	1,151	346	23.1
Below ground	4,217	2,441	1,776	42.1
Engineers, firemen, mechanics, etc	600	479	121	20.2
Miners, miners' helpers, and quarrymen	4,132	2,300	1,832	44.3
All other employees	982	813	169	17.2
Primary horsepower	31,330	26,278	5,052	16.1
Capital	$80,998,754	$48,892,888	$32,105,866	39.6
Expenses of operation and development	9,652,288	7,198,763	2,453,525	25.4
Services	5,888,679	4,403,425	1,485,254	25.2
Salaries	540,590	357,878	182,712	33.8
Wages	5,348,089	4,045,547	1,302,542	24.4
Supplies, including fuel and rent of power	2,796,186	2,203,657	592,529	21.2
Contract work	320,197	23,036	297,161	92.8
Rent of offices and other sundry expenses	647,226	568,645	78,581	12.1

Comparison of mining industries: 1902–1909.—In order to make a comparison between the census of 1909 and the preceding census of mines and quarries, that of 1902, it is necessary to include for 1909 figures for the production of lime, which were included in the report on mines and quarries for 1902, but classified as a manufacturing industry in 1909. In any case, only the few items specified in Table 7 can be compared for the two years.

Table 7

	PRODUCING ENTERPRISES.		
	1909	**1902**	Per cent of increase.[1]
Wages and salaries	$4,444,259	$4,480,194	−0.8
Supplies and materials	$2,225,762	$1,626,153	36.9
Royalties and rent of mines	$27,632	$28,103	−1.7
Contract work	[2]$22,665	$43,442	−47.8
Value of products	$8,749,650	$8,214,671	6.5
Primary horsepower	26,363	18,703	41.0

[1] A minus sign (−) denotes decrease.
[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 8.

Duplication between manufactures and mining.—In the sandstone industry some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included both in the statistics for mines and quarries and for manufactures. As a result of this fact the combined value of products for the manufacturing and mining industries in Idaho involves a duplication of $7,500.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 8

	Aggregate.	PRODUCING MINES AND QUARRIES.						NONPRODUCING MINES AND QUARRIES.		
		Total.	Gold and silver, deep mines.	Placer gold.	Copper.	Sandstone.	All other.[1]	Total.	Gold and silver, deep mines.	All other.[2]
Number of operators	890	174	60	96	4	4	10	716	697	19
Number of mines and quarries	2,431	370	154	160	27	4	25	2,061	2,031	30
Capital	$80,998,754	$48,892,888	$40,752,983	$3,488,780	$3,027,944	$56,600	$1,566,581	$32,105,866	$31,985,906	$119,960
Expenses of operation and development	$9,652,288	$7,198,763	$6,582,783	$238,486	$310,540	$19,272	$47,682	$2,453,525	$2,424,661	$28,864
Services—										
Salaried officers of corporations, superintendents, and managers	$432,344	$269,251	$224,563	$24,280	$10,250	$3,400	$6,758	$163,093	$161,293	$1,800
Clerks and other salaried employees	$108,246	$88,627	$82,017	$1,030	$5,400	$180		$19,619	$18,005	$1,614
Wage earners	$5,348,089	$4,045,547	$3,698,106	$147,703	$167,132	$11,434	$21,172	$1,302,542	$1,286,665	$15,877
Miscellaneous—										
Supplies	$2,383,373	$1,847,458	$1,718,126	$34,345	$84,431	$2,050	$8,506	$535,915	$529,700	$6,215
Fuel and rent of power	$412,813	$356,199	$337,598	$9,274	$8,320	$243	$764	$56,614	$56,614	
Royalties and rent of mines	$29,687	$27,632	$23,152	$3,383		$583	$514	$2,055	$2,055	
Taxes	$164,935	$158,145	$143,237	$4,882	$9,674		$352	$6,790	$6,782	$8
Contract work	$320,197	$23,036	$12,683	$371	$8,100	$982	$900	$297,161	$295,661	$1,500
Rent of offices and other sundry expenses	$452,604	$382,868	$343,301	$13,218	$17,233	$400	$8,716	$69,736	$67,886	$1,850
Value of products	$8,649,342	$8,649,342	$7,928,602	$220,743	$418,086	$30,004	$55,907			
Persons engaged in industry	6,959	3,940	3,251	450	142	25	72	3,019	2,944	75
Proprietors and officials	1,146	284	116	136	5	5	22	862	837	25
Proprietors and firm members	871	169	34	116	1	3	15	702	678	24
Number performing manual labor	297	115	15	93		2	5	182	170	12
Salaried officers of corporations	73	24	18	4	1		1	49	49	
Superintendents and managers	202	91	64	16	3	2	6	111	110	1
Clerks and other salaried employees	99	64	58	1	3	1	1	35	33	2
Wage earners, Dec. 15, 1909, or nearest representative day (all 16 years of age and over)	5,714	3,592	3,077	313	134	19	49	2,122	2,074	48
Above ground	1,497	1,151	781	289	26	19	36	346	312	34
Below ground	4,217	2,441	2,296	24	108		13	1,776	1,762	14
Engineers, firemen, mechanics, etc	600	479	409	45	20	1	4	121	121	
Above ground	489	391	341	31	14	1	4	98	98	
Below ground	111	88	68	14	6			23	23	
Miners, miners' helpers, and quarrymen	4,132	2,300	1,922	225	97	16	40	1,832	1,786	46
Above ground	423	329	64	222		16	27	94	62	32
Below ground	3,709	1,971	1,858	3	97		13	1,738	1,724	14
All other employees	982	813	746	43	17	2	5	169	167	2
Above ground	585	431	376	36	12	2	5	154	152	2
Below ground	397	382	370	7	5			15	15	
Number of wage earners employed on the 15th day of each month:										
January	3,833	3,124	2,926	27	134	13	24	709	700	9
February	3,875	3,094	2,911	23	126	12	22	781	767	14
March	4,007	3,119	2,911	71	102	12	23	888	873	15
April	4,262	3,341	2,942	248	91	13	47	921	909	12
May	4,396	3,426	2,980	281	106	13	46	970	947	23
June	4,541	3,439	2,987	273	120	20	39	1,102	1,079	23
July	4,552	3,365	2,975	258	79	20	33	1,187	1,170	17
August	4,589	3,358	3,066	144	96	20	32	1,231	1,213	18
September	4,446	3,151	2,826	155	120	19	31	1,295	1,280	15
October	4,568	3,192	2,871	145	124	16	37	1,376	1,355	21
November	4,525	3,212	2,927	102	146	13	24	1,313	1,291	22
December	4,300	3,135	2,936	35	134	13	17	1,165	1,152	13
Land controlled, acres	143,466	48,920	17,855	25,978	1,875	135	3,077	94,546	90,815	3,731
Owned	137,731	45,674	16,381	24,563	1,875	60	2,795	92,057	88,326	3,731
Held under lease	5,735	3,246	1,474	1,415		75	282	2,489	2,489	
Mineral land	139,245	45,463	15,608	25,248	1,395	135	3,077	93,782	90,211	3,571
Owned	133,515	42,222	14,139	23,833	1,395	60	2,795	91,293	87,722	3,571
Held under lease	5,730	3,241	1,469	1,415		75	282	2,489	2,489	
Timber land	1,534	1,149	899	250				385	385	
Other land	2,687	2,308	1,348	480	480			379	219	160
Primary horsepower	31,330	26,278	23,646	1,647	818	118	51	5,052	5,038	14

---

[1] Includes operators as follows: Antimony, 1; asbestos, 1; bituminous coal, 2; granite, 2; limestone, 1; phosphate rock, 1; pumice, 1; traprock, 1.

[2] Includes operators as follows: Bituminous coal, 1; limestone, 1; placer gold, 17.

ILLINOIS.

Summary.—Illinois ranked second among the states in the value of the products of mining industries in 1909, Pennsylvania being the only state to report products of greater value. The gross value of the products for the state was $76,658,974. Deducting from this amount, $101,980, the value of the lead and zinc ore and natural gas sold by some operators and used as materials or resold by others, leaves $76,556,994 as the net value of the products. The principal industry was bituminous coal mining, which reported products valued at $53,030,545. This figure represents 69.3 per cent of the total net value of the products of all mines, quarries, and wells. The value of the products of petroleum and natural gas wells, the industry second in importance, amounted to $18,883,102.

For the five enterprises shown in the column "All other," in Table 7, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	915	82,436	$76,658,974	$83,780	100.0	100.0	100.0
Individual	211	2,979	1,997,825	9,468	23.1	3.6	2.6
Firm	298	2,491	4,563,781	15,315	32.6	3.0	6.0
Corporation	391	76,636	68,440,973	175,041	42.7	93.0	89.3
Other	15	330	1,656,395	110,426	1.6	0.4	2.2
Bituminous coal	470	74,445	53,030,545	112,831	100.0	100.0	100.0
Individual	133	2,578	1,481,485	11,139	28.3	3.5	2.8
Firm	91	1,925	1,127,484	12,390	19.4	2.6	2.1
Corporation	239	69,736	50,264,245	210,311	50.9	93.7	94.8
Other	7	206	157,331	22,476	1.5	0.3	0.3
Petroleum and natural gas	323	4,059	18,895,815	58,501	100.0	100.0	100.0
Individual	38	98	360,692	9,492	11.8	2.4	1.9
Firm	189	360	3,326,717	17,602	58.5	8.9	17.6
Corporation	88	3,477	13,709,342	155,788	27.2	85.7	72.6
Other	8	124	1,499,064	187,383	2.5	3.1	7.9
Limestone	81	3,276	3,977,359	49,103	100.0	100.0	100.0
Individual	26	172	108,984	4,192	32.1	5.3	2.7
Firm	11	130	69,219	6,293	13.6	4.0	1.7
Corporation	44	2,974	3,799,156	86,344	54.3	90.8	95.5

Out of a total of 915 operators, 391, or 42.7 per cent, were corporations. These corporations reported 89.3 per cent of the total value of products and employed 93 per cent of all wage earners.

Table 2

	Incorporated.	Unincorporated.
Number of operators	391	524
Number of mines and quarries	449	310
Number of wells	8,407	2,511
Proprietors and firm members, total		1,425
Number performing manual labor		401
Salaried employees:		
Officers of corporations	373	
Superintendents and managers	705	140
Clerks and other salaried employees	1,223	87
Wage earners, Dec. 15, 1909, or nearest representative day	76,636	5,800
Capital	$107,067,809	$9,891,898
Expenses of operation and development	62,366,696	6,351,425
Salaries—		
Officers of corporations	909,641	
Superintendents and managers	1,019,899	128,562
Clerks and other salaried employees	1,008,506	46,047
Wages	43,798,689	2,580,038
Royalties and rent of mines	2,625,140	954,332
Taxes	256,720	30,740
Supplies and miscellaneous expenses	12,646,121	2,611,706
Cost of ore purchased and natural gas purchased and resold	101,980	
Value of products	68,440,973	8,218,001

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 82,436 wage earners reported by all enterprises, 29,297, or 35.5 per cent, were employed in the 29 enterprises employing over 500 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cen distribution.
All industries	986	100.0	82,436	100.0
No wage earners	11	1.1		
Contract work and part-time employees	54	5.5		
1 to 5	310	31.4	650	0.8
6 to 20	231	23.4	2,591	3.1
21 to 50	102	10.3	3,492	4.2
51 to 100	73	7.4	5,337	6.5
101 to 500	176	17.8	41,069	49.8
501 to 1,000	21	2.1	14,190	17.2
Over 1,000	8	0.8	15,107	18.3
Bituminous coal	541	100.0	74,445	100.0
No wage earners	2	0.4		
Contract work	6	1.1		
1 to 5	58	10.7	203	0.3
6 to 20	153	28.3	1,674	2.2
21 to 50	73	13.5	2,505	3.4
51 to 100	55	10.2	4,009	5.4
101 to 500	166	30.7	39,087	52.5
501 to 1,000	21	3.9	14,190	19.1
Over 1,000	7	1.3	12,777	17.2
Petroleum and natural gas	323	100.0	4,059	100.0
No wage earners	5	1.5		
Contract work and part-time employees	46	14.2		
1 to 5	219	67.8	337	8.3
6 to 20	37	11.5	423	10.4
21 to 50	7	2.2	263	6.5
51 to 100	6	1.9	430	10.6
Over 100	3	0.9	2,606	64.2
Limestone	81	100.0	3,276	100.0
No wage earners	2	2.5		
1 to 5	18	22.2	58	1.8
6 to 20	27	33.3	335	10.2
21 to 50	16	19.8	511	15.6
51 to 100	11	13.6	810	24.7
Over 100	7	8.6	1,562	47.7

Persons employed in mining.—Of the 86,389 persons engaged in producing mines in 1909, 82,436 were wage earners, 2,528 salaried employees, and 1,425 proprietors and firm members. Of the last class, 401 performed manual labor in or about the mines. Coal mining, the leading industry, employed 74,445, or 90.3 per cent of all wage earners.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of employees working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined, in 95 per cent of the number of enterprises weighted according to the number of wage earners, the prevailing hours per day were eight or under. For bituminous coal mines the corresponding per cent was 99.9, while in the limestone quarries only 1.7 per cent of the enterprises were operated on this basis. In this industry a day of 10 hours prevailed in 87.7 per cent of the enterprises.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries[1]	649	100.0	100.0
8 hours and under	535	82.4	95.0
9 hours	25	3.9	0.5
10 hours	86	13.3	4.2
12 hours	3	0.5	0.3
Bituminous coal	533	100.0	100.0
8 hours and under	523	98.1	99.9
9 hours	4	0.8	0.1
10 hours	6	1.1	0.1
Limestone	79	100.0	100.0
8 hours	6	7.0	1.7
9 hours	10	12.7	5.6
10 hours	62	78.5	87.7
12 hours	1	1.3	4.9

[1] Exclusive of petroleum and natural gas.

Engines and power.—The aggregate horsepower employed in the producing enterprises, as shown by Table 5, was 225,330, all of which, with the exception of 3,382 horsepower developed by electric motors operated by purchased current, was developed by engines owned by the enterprises using them.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	All other.
Primary power:					
Aggregate horsepower	**225,330**	**166,174**	**40,615**	**16,342**	**2,199**
Owned	221,948	165,925	40,615	13,209	2,199
Steam engines—					
Number	2,450	1,987	247	178	38
Horsepower	185,471	165,441	4,720	13,147	2,163
Gas or gasoline engines—					
Number	1,621	71	1,541	4	5
Horsepower	36,477	484	35,895	62	36
Electric motors operated by purchased current—					
Number	76	16	....	60	......
Horsepower	3,382	249	....	3,133	......
Electric motors run by current generated by enterprise using:					
Number	342	298	....	34	10
Horsepower	14,567	12,165	....	2,127	275

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

The greatest relative increase in the value of products from 1902 to 1909 was in the value of petroleum and natural gas, which increased in the eight years from $2,844 to $18,895,815. Another important increase was in the value of bituminous coal from $33,945,910 to $52,999,918.

Table 6

	PRODUCING ENTERPRISES.		
	1909	**1902**	Per cent of increase.
Wages and salaries	$49,838,660	$28,539,154	74.6
Supplies and materials	$9,973,037	$3,315,552	200.8
Royalties and rent of mines	$3,579,960	$474,475	654.5
Contract work	[1] $2,360,424	$26,016	8,973.0
Value of products	$77,214,343	$37,377,226	106.6
Primary horsepower	226,124	88,500	155.5

[1] Exclusive of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the production of limestone, peat, and sandstone some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries in Illinois involves a duplication of $577,428.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.									Nonproducing mines, quarries, and wells.
		Total.	Bituminous coal.	Petroleum and natural gas.	Lead and zinc.	Limestone.	Sandstone.	Clay (sold as such).	Infusorial earth.	All other.[1]	
Number of operators	924	915	470	323	4	81	8	14	10	5	9
Number of mines, quarries, and wells	11,689	11,677	631	10,918	3	84	8	16	12	5	12
Capital	[2] $117,469,953	[2] $116,959,707	$60,426,629	$34,366,518	$183,800	$3,011,628	$58,775	$305,637	$33,900	$49,956	$510,246
Expenses of operation and development	$68,861,885	$68,718,121	$51,697,504	$13,478,053	$213,137	$2,882,939	$20,495	$95,166	$53,488	$279,418	$143,884
Services—											
Salaried officers of corporations, superintendents, and managers	[3] $2,059,892	[3] $2,058,102	$1,324,355	$337,189	$7,588	$153,835	$5,008	$5,258	$4,890	$17,737	$1,790
Clerks and other salaried employees	[3] $1,054,553	[3] $1,054,553	$759,313	$99,109	$1,800	$69,332	...	$1,450	$120	$4,441	...
Wage earners	$46,410,023	$46,378,727	$41,991,246	$2,626,371	$56,797	$1,461,714	$9,588	$57,942	$25,191	$149,878	$31,296
Miscellaneous—											
Supplies	$8,495,362	$8,472,837	$3,939,118	$4,075,483	$13,001	$411,100	$1,050	$9,251	$3,741	$20,093	$22,525
Cost of ore purchased and natural gas purchased and resold	$101,980	$101,980	...	$12,713	$89,267	...	...	...	...	...	...
Fuel and rent of power	$1,327,904	$1,325,880	$1,005,253	$38,752	$20,887	$221,763	$303	$5,923	$9,140	$23,859	$2,024
Royalties and rent of mines	$3,579,553	$3,579,472	$744,860	$2,776,068	$16,973	$34,607	$3,019	3,660	$285	...	$81
Taxes	[3] $287,641	[3] $287,460	$171,582	$72,107	$232	$21,702	$89	$490	$253	$953	$181
Contract work	[3] $2,443,378	[3] $2,376,956	$51,480	$2,302,651	...	...	...	$6,125	...	...	$66,422
Rent of offices and other sundry expenses	[3] $3,101,699	[3] $3,082,154	$1,710,297	$1,135,610	$6,592	$508,886	$1,348	$5,067	$9,878	$62,458	$19,545
Value of products	$76,858,874	$76,658,974	$53,030,545	$18,895,815	$292,453	$3,977,359	$30,360	$108,821	$59,200	$284,821	...
Persons engaged in industry	[4] 86,495	[4] 86,388	76,781	5,188	137	3,500	40	182	88	304	106
Proprietors and officials	[4] 2,657	[4] 2,643	1,364	1,004	5	146	12	13	18	17	14
Proprietors and firm members	1,436	1,425	528	817	...	51	9	6	13	1	11
Number performing manual labor	401	401	359	22	...	12	3	4	...	1	...
Salaried officers of corporations	[4] 373	[4] 373	241	44	1	41	2	...	1	8	...
Superintendents and managers	[4] 848	[4] 845	595	143	4	54	1	7	4	8	3
Clerks and other salaried employees	[4] 1,310	[4] 1,310	952	125	2	78	...	2	1	6	...
Wage earners, Dec. 15, 1909, or nearest representative day	82,528	82,436	74,445	4,059	130	3,276	28	147	70	281	92
Above ground	15,090	15,011	7,240	4,059	61	3,276	28	108	56	183	79
Below ground	67,438	67,425	67,205	...	69	...	...	39	14	98	13
Men 16 years of age and over	82,432	82,340	74,368	4,059	130	3,275	28	130	69	281	92
Engineers, firemen, mechanics, etc	7,545	7,537	3,699	3,281	29	448	1	13	13	53	8
Above ground	6,806	6,798	2,974	3,281	24	448	1	13	13	44	8
Below ground	739	739	725	...	5	...	...	...	...	9	...
Miners, miners' helpers, quarrymen, and stonecutters	56,046	56,019	53,503	...	62	2,139	25	103	42	145	27
Above ground	2,356	2,342	...	...	10	2,139	25	81	31	56	14
Below ground	53,690	53,677	53,503	...	52	...	...	22	11	89	13
All other employees	18,841	18,784	17,166	778	39	688	2	14	14	83	67
Above ground	5,922	5,865	4,262	778	27	688	2	14	11	83	57
Below ground	12,919	12,919	12,904	...	12	...	...	...	3	...	...
Boys under 16 years of age[5]	96	96	77	...	...	1	...	17	1	...	...
Number of wage earners employed on the 15th day of each month:											
January	74,994	74,989	69,376	3,680	117	1,415	16	107	50	228	5
February	74,299	74,294	68,760	3,634	46	1,458	15	101	51	229	5
March	73,722	73,717	67,569	3,625	28	2,080	19	99	48	251	5
April	68,489	68,478	61,266	3,702	67	2,973	26	115	52	277	11
May	68,128	68,113	60,852	3,749	69	3,084	34	112	51	162	15
June	66,570	66,553	58,799	3,847	75	3,372	30	114	51	265	17
July	67,503	67,440	59,637	3,879	81	3,359	37	123	49	275	63
August	67,213	67,137	59,571	3,821	107	3,249	33	115	52	189	76
September	72,105	72,004	64,177	3,692	114	3,590	32	134	55	210	101
October	76,124	76,042	68,032	3,834	117	3,524	56	135	59	285	82
November	78,086	78,000	70,074	3,853	117	3,486	38	127	70	235	86
December	78,342	78,268	71,193	3,957	120	2,566	14	118	65	235	74
Land controlled, acres	1,001,886	980,389	585,366	396,135	710	4,206	458	1,551	840	1,123	11,497
Owned	443,569	441,332	424,739	10,513	...	3,481	208	1,188	200	1,003	2,237
Held under lease	558,317	549,057	160,627	385,622	710	725	250	363	640	120	9,260
Mineral and oil land	968,573	957,076	552,396	396,135	710	4,085	458	1,551	840	901	11,497
Owned	414,452	412,215	395,965	10,513	...	3,360	208	1,188	200	781	2,237
Held under lease	554,121	544,861	156,431	385,622	710	725	250	363	640	120	9,260
Timber land	3,472	3,472	3,255	...	...	...	...	...	...	217	...
Other land	29,841	29,841	29,715	...	...	121	...	...	...	5	...
Primary horsepower	228,344	225,330	168,174	40,816	577	18,342	33	457	180	852	1,014

---

[1] Includes operators as follows: Fluorspar, 4; peat, 1.

[2] Includes $18,522,864 which could not be distributed among the several industries. Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[3] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $202,242; clerks and other salaried employees, $118,988; taxes, $20,052; and contract work, $16,700.

[4] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 208; salaried officers of corporations, 35; superintendents and managers, 29; and clerks and other salaried employees, 144.

[5] In the bituminous coal industry 73 boys were employed below ground, and in the clay industry, 17.

INDIANA.

Summary.—The gross value of the products of mines, quarries, and wells in Indiana, in 1909, was $21,934,201. Deducting from this amount, $22,595, the value of the natural gas sold by some establishments and resold by others, leaves $21,911,606 as the net value of products. The principal industries of the state were bituminous coal mining, limestone quarrying, and the production of petroleum and natural gas. The value of the products of these three industries, after deducting the natural gas purchased, was $21,836,843, or 99.7 per cent of the total value of products of the state. Of the total for the three industries the bituminous coal mines contributed $15,018,123, the limestone quarries $3,616,696, and the petroleum and natural gas wells $3,202,024. Of the minor industries the production of clay was the most important, the value of the clay sold being $34,700.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Out of a total of 1,010 producing enterprises in the state in 1909, 352, or 34.9 per cent, were corporations. These corporations reported 91.3 per cent of the total value of products and employed 91 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	1,010	27,559	$21,934,201	$21,717	100.0	100.0	100.0
Individual	389	1,489	1,004,631	2,583	38.5	5.4	4.6
Firm [1]	209	977	854,621	4,089	20.7	3.5	3.9
Corporation	352	25,084	20,033,794	56,914	34.9	91.0	91.3
Other	60	9	41,155	686	5.9	(2)	0.2
Bituminous coal	223	22,357	15,018,123	67,346	100.0	100.0	100.0
Individual	86	685	368,754	4,288	38.6	3.1	2.5
Firm [1]	47	337	247,352	5,263	21.1	1.5	1.6
Corporation	90	21,335	14,402,017	160,022	40.4	95.4	95.9
Petroleum and natural gas	644	1,345	3,224,619	5,007	100.0	100.0	100.0
Individual	246	87	263,875	1,073	38.2	6.5	8.2
Firm	126	117	423,291	3,359	19.6	8.7	13.1
Corporation	212	1,132	2,496,298	11,775	32.9	84.2	77.4
Other	60	9	41,155	686	9.3	0.7	1.3
Limestone	126	3,724	3,616,696	28,704	100.0	100.0	100.0
Individual	47	655	332,068	7,065	37.3	17.6	9.2
Firm	35	517	180,323	5,152	27.8	13.9	5.0
Corporation	44	2,552	3,104,305	70,552	34.9	68.5	85.8

[1] Includes 1 estate.

[2] Less than one-tenth of 1 per cent.

The 60 operators reported as other than individuals, firms, or corporations include 51 cooperative associations engaged in the production of natural gas primarily for consumption by the members. These were all small enterprises frequently operated without hired labor or by employees who gave only a part of their time to the enterprise. The nine wage earners reported for the group represent the number who were employed full time.

Table 2

	Incorporated.	Unincorporated.
Number of operators	352	658
Number of mines and quarries	242	238
Number of wells	7,704	2,669
Proprietors and firm members, total	....	2,628
Number performing manual labor	....	181
Salaried employees:		
Officers of corporations	258	....
Superintendents and managers	307	66
Clerks and other salaried employees	443	31
Wage earners, Dec. 15, 1909, or nearest representative day	25,084	2,475
Capital	$56,490,130	$3,274,817
Expenses of operation and development	18,922,928	1,389,824
Salaries—		
Officers of corporations	286,152	....
Superintendents and managers	405,500	44,695
Clerks and other salaried employees	350,297	14,877
Wages	13,996,089	786,399
Royalties and rent of mines	474,761	120,513
Taxes	157,127	19,242
Supplies and miscellaneous expenses	3,244,837	389,668
Cost of natural gas purchased and resold	8,165	14,430
Value of products	20,033,794	1,900,407

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number	Per cent distribution.
All industries	1,031	100.0	27,559	100.0
No wage earners	315	30.6	....	....
Contract work and part-time employees	157	15.2	....	....
1 to 5	243	23.6	591	2.1
6 to 20	166	16.1	1,782	6.5
21 to 50	50	4.8	1,541	5.6
61 to 100	39	3.8	2,943	10.7
101 to 500	53	5.1	11,763	42.7
501 to 1,000	3	0.3	2,044	7.4
Over 1,000	5	0.5	6,895	25.0
Bituminous coal	244	100.0	22,357	100.0
No wage earners	2	0.8	....	....
Contract work	4	1.6	....	....
1 to 5	65	26.6	254	1.1
6 to 20	73	29.9	648	2.9
21 to 50	16	6.6	538	2.4
51 to 100	27	11.1	2,002	9.0
101 to 500	50	20.5	10,680	47.8
Over 500	7	2.9	8,235	36.8
Petroleum and natural gas	644	100.0	1,345	100.0
No wage earners	309	48.0	....	....
Contract work and part-time employees	153	23.8	....	....
1 to 5	158	24.5	277	20.6
6 to 20	20	3.1	216	16.1
Over 20	4	0.6	852	63.3
Limestone	126	100.0	3,724	100.0
No wage earners	3	2.4	....	....
1 to 5	14	11.1	43	1.2
6 to 20	64	50.8	830	22.3
21 to 50	31	24.6	924	24.8
51 to 100	11	8.7	844	22.7
Over 100	3	2.4	1,083	29.1

Out of a total of 1,031 enterprises, 5 employed over 1,000 wage earners each. The total number of wage earners employed in these 5 enterprises was 6,895, which represents one-fourth of the wage earners employed in all enterprises. In the petroleum and natural gas industry 309 enterprises were operated by the proprietors without the aid of hired labor and 153 were operated by contract work or by wage earners devoting but a small part of their time to the enterprise. The 4 largest enterprises in this industry employed 852 wage earners, or an average of 213 per enterprise.

Persons employed in mining.—Bituminous coal mining, the leading industry in 1909 when measured by the value of the product, also ranks first when the number of persons employed is considered. Out of a total of 31,292 persons employed in producing mines, 23,109, or 73.8 per cent, were employed in bituminous coal mines. Limestone quarries ranked second, employing 4,078 persons, or 13 per cent of the total number.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter percentage does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

Table 4

INDUSTRY AND HOURS PER DAY	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries [1]	**377**	**100.0**	**100.0**
8 hours and under	233	61.8	85.0
9 hours	14	3.7	0.7
10 hours	130	34.5	14.3
Bituminous coal	**238**	**100.0**	**100.0**
8 hours and under	231	97.1	99.6
9 hours	6	2.5	0.2
10 hours	1	0.4	0.2
Limestone	**123**	**100.0**	**100.0**
8 hours	1	0.8	0.4
9 hours	3	2.4	2.4
10 hours	119	96.7	97.2

[1] Exclusive of petroleum and natural gas.

A marked difference is noted in the number of hours persons are employed in the two leading industries shown in the table. In the bituminous coal mines in 99.6 per cent of the enterprises weighted according to the number of wage earners, 8 hours and under were the prevailing hours of labor, while in the limestone quarries 97.2 per cent of the enterprises so weighted were operated on a 10-hour basis.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises in Indiana, in 1909, was 95,039, of which 71,964 horsepower was generated by steam engines and 22,447 horsepower by gasoline engines connected with the enterprises, and 628 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	All other.
Primary power:					
Aggregate horsepower	**95,039**	**45,910**	**28,159**	**20,314**	**656**
Owned	94,411	45,830	28,159	19,766	656
Steam engines—					
Number	1,257	577	147	523	10
Horsepower	71,964	45,739	5,945	19,630	650
Gas or gasoline engines—					
Number	944	19	916	7	2
Horsepower	22,447	91	22,214	136	6
Electric motors operated by purchased current—					
Number	27	4	....	23	......
Horsepower	628	80	....	548	......
Electric motors run by current generated by enterprise using:					
Number	286	187	1	97	1
Horsepower	10,026	7,476	20	2,495	35

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and for enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$16,092,359	$11,819,897	36.1
Supplies and materials	$2,557,423	$3,389,898	−24.6
Royalties and rent of mines	$595,475	$1,807,948	−67.1
Contract work	[2] $265,259	$2,159,980	−87.7
Value of products	$22,324,647	$26,896,393	−17.0
Primary horsepower	95,929	120,511	−20.4

[1] A minus sign (−) denotes decrease.

[2] Exclusive of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

From the table it will be noted that there was a considerable decrease in mining activities in the state during the past eight years. This was due to the decreased production of petroleum and natural gas. In 1902 the value of the petroleum and natural gas reported was $13,607,966, while in 1909 the product reported was valued at only $3,224,619, a decrease of $10,383,347, or 76.3 per cent.

Duplication between manufactures and mining.—In the limestone, peat, and whetstone industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries in Indiana involves a duplication of $2,004,656.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.							Nonproducing mines, quarries, and wells.
		Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	Clay (sold as such).	Oilstones, scythestones, and whetstones.	All other.[1]	
Number of operators	1,014	1,010	223	644	126	6	6	5	4
Number of mines, quarries, and wells	10,858	10,853	322	10,373	140	7	6	5	6
Capital	[2] $59,854,796	[2] $59,764,947	$35,937,461	$16,836,419	$6,258,290	$133,200	$1,500	$59,275	$89,849
Expenses of operation and development	$20,363,826	$20,312,752	$14,906,831	$2,483,585	$2,866,744	$25,487	$8,492	$21,613	$41,074
Services—									
Salaried officers of corporations, superintendents, and managers	$736,347	$736,347	$381,914	$173,911	$175,466	$1,456	....	$3,600	....
Clerks and other salaried employees	$365,174	$365,174	$222,197	$60,206	$82,271	$150	....	$350	....
Wage earners	$14,792,686	$14,782,488	$12,273,544	$817,753	$1,657,981	$16,606	$6,797	$9,807	$10,198
Miscellaneous—									
Supplies	$1,845,706	$1,823,904	$984,353	$395,697	$437,119	$3,330	$820	$2,585	$21,802
Cost of natural gas purchased and resold	$22,595	$22,595	....	$22,595	....	....	....	....	....
Fuel and rent of power	$552,563	$551,821	$214,621	$75,881	$256,123	$2,150	$465	$2,581	$742
Royalties and rent of mines	$596,741	$595,274	240,494	$319,833	$34,527	$420	....	....	$1,467
Taxes	$176,404	$176,369	$83,230	$73,362	$18,932	$237	$165	$443	$35
Contract work	$302,392	$295,982	$10,674	$276,022	$9,286	....	....	....	$6,410
Rent of offices and other sundry expenses	$963,218	$962,798	$495,804	$268,325	$195,039	$1,138	$245	$2,247	$420
Value of products	$21,934,201	$21,934,201	$15,018,123	$3,224,619	$3,616,696	$34,700	$12,170	$27,893	....
Persons engaged in industry	31,325	31,292	23,109	3,960	4,078	44	40	71	33
Proprietors and officials	3,260	3,259	458	2,518	264	5	6	8	1
Proprietors and firm members	2,629	2,628	202	2,277	136	3	6	4	1
Number performing manual labor	181	181	110	24	45	1	1	....	....
Salaried officers of corporations	258	258	99	135	22	....	....	2	....
Superintendents and managers	373	373	157	106	106	2	....	2	....
Clerks and other salaried employees	474	474	294	87	90	1	....	2	....
Wage earners, Dec. 15, 1909, or nearest representative day	27,591	27,559	22,357	1,345	3,724	38	34	61	32
Above ground	7,294	7,278	2,102	1,345	3,724	12	34	61	16
Below ground	20,297	20,281	20,255	....	....	26	....	....	16
Men 16 years of age and over	27,529	27,497	22,304	1,345	3,715	38	34	61	32
Engineers, firemen, mechanics, etc	2,730	2,723	1,017	1,034	662	6	....	4	7
Above ground	2,646	2,639	933	1,034	662	6	....	4	7
Below ground	84	84	84	....	....	....	....	....	....
Miners, miner's helpers, quarrymen, and stonecutters	19,430	19,414	17,129	....	2,198	29	11	47	16
Above ground	2,259	2,259	....	....	2,198	3	11	47	....
Below ground	17,171	17,155	17,129	....	....	26	....	....	16
All other employees	5,369	5,360	4,158	311	855	3	23	10	9
Above ground	2,380	2,371	1,169	311	855	3	23	10	9
Below ground	2,989	2,989	2,989	....	....	....	....	....	....
Boys under 16 years of age[3]	62	62	53	....	9	....	....	....	....
Number of wage earners employed on the 15th day of each month:									
January	22,612	22,611	19,309	1,419	1,818	33	15	17	1
February	22,642	22,641	19,117	1,452	2,007	32	15	18	1
March	23,274	23,273	18,813	1,396	2,995	33	15	21	1
April	22,369	22,363	17,394	1,394	3,509	33	15	18	6
May	22,777	22,772	17,615	1,403	3,780	34	17	23	5
June	22,035	22,007	16,670	1,357	3,868	33	21	58	28
July	23,527	23,506	18,144	1,303	3,948	33	22	56	21
August	24,419	24,418	18,635	1,327	4,340	32	26	58	1
September	25,909	25,880	20,033	1,357	4,402	33	28	27	29
October	26,272	26,238	20,626	1,334	4,194	34	28	22	34
November	26,279	26,245	21,267	1,245	3,664	34	28	7	34
December	25,310	25,278	21,318	1,325	2,567	34	28	6	32
Land controlled, acres	524,502	522,176	155,676	353,205	6,334	6,596	194	271	2,326
Owned	168,805	167,777	117,619	37,432	5,754	6,532	194	246	1,028
Held under lease	355,697	354,399	37,957	315,773	580	64	....	25	1,298
Mineral and oil land	505,032	502,706	140,244	353,205	4,362	4,662	42	191	2,326
Owned	150,983	149,955	103,910	37,432	3,807	4,598	42	166	1,028
Held under lease	354,049	352,751	36,334	316,773	555	64	....	25	1,298
Timber land	4,946	4,946	3,436	....	10	1,500	....	....	....
Other land	14,524	14,524	11,896	....	1,962	434	152	80	....
Primary horsepower	96,304	95,039	46,910	28,159	20,314	275	89	292	265

---

[1] Includes operators as follows: Peat, 3; sandstone, 2.

[2] Includes $538,802 which could not be distributed among the various industries. Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[3] In the bituminous coal industry 53 boys were employed below ground.

IOWA.

Summary.—The total value of the products of the producing mining industries in Iowa in 1909 amounted to $13,877,781, and the total number of persons employed was 19,904. Of these totals the coal mining industry reported $12,682,106, or 91.4 per cent of the value of the products, and employed 18,332, or 92.1 per cent of the employees. Gypsum mining and limestone quarrying, the industries next in importance, reported products valued, respectively, at $669,731 and $499,665.

In the bituminous coal industry as a whole the expenses of operation and development exceeded the value of the products, a result which indicates either that certain enterprises were operated at a loss, or that a considerable sum was expended for development work which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 373 operators, 118, or 31.6 per cent, were corporations. These corporations reported 88.6 per cent of the total value of products and employed 85.6 per cent of all wage earners.

Table 1	PRODUCING ENTERPRISES: 1909						
INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	373	19,010	$13,877,781	$37,206	100.0	100.0	100.0
Individual	152	1,258	766,085	5,040	40.8	6.6	5.5
Firm	100	1,377	784,113	7,841	26.8	7.2	5.7
Corporation	118	16,276	12,294,411	104,190	31.6	85.6	88.6
Other	3	99	33,172	11,057	0.8	0.5	0.2
Bituminous coal	258	17,623	12,682,106	49,155	100.0	100.0	100.0
Individual	81	1,003	627,238	7,744	31.4	5.7	4.9
Firm	79	1,206	639,492	8,095	30.6	6.8	5.0
Corporation	98	15,414	11,415,376	116,483	38.0	87.5	90.0

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 387 enterprises reported, 124 employed less than 5 wage earners each and 2 were operated exclusively by contract work. Nearly one-fourth of all the wage earners in the mining industry were employed in the 6 bituminous coal enterprises employing over 500 wage earners each.

Table 2	Incorporated.	Unincorporated.
Number of operators	118	255
Number of mines and quarries	167	264
Proprietors and firm members, total		423
Number performing manual labor		285
Salaried employees:		
Officers of corporations	85	
Superintendents and managers	137	23
Clerks and other salaried employees	207	19
Wage earners, Dec. 15, 1909, or nearest representative day	16,276	2,734
Capital	$7,303,613	$1,177,870
Expenses of operation and development	12,465,530	1,229,184
Salaries—		
Officers of corporations	132,943	
Superintendents and managers	165,767	22,241
Clerks and other salaried employees	208,492	11,532
Wages	9,884,071	986,375
Royalties and rent of mines	298,307	51,133
Taxes	38,886	4,688
Supplies and miscellaneous expenses	1,737,064	153,215
Value of products	12,294,411	1,583,370

Table 3	PRODUCING ENTERPRISES: 1909			
INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	387	100.0	19,010	100.0
No wage earners	24	6.2		
Contract work	2	0.5		
1 to 5	100	25.8	284	1.5
6 to 20	131	33.9	1,428	7.5
21 to 50	47	12.1	1,482	7.8
51 to 100	30	7.8	2,126	11.2
101 to 500	47	12.1	9,381	49.3
Over 500	6	1.6	4,309	22.7
Bituminous coal	272	100.0	17,623	100.0
No wage earners	3	1.1		
1 to 5	52	19.1	170	1.0
6 to 20	101	37.1	1,088	6.2
21 to 50	38	14.0	1,211	6.9
51 to 100	27	9.9	1,917	10.9
101 to 500	45	16.5	8,928	50.7
Over 500	6	2.2	4,309	24.5

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In the bituminous coal mining enterprises, which employed 92.7 per cent of the wage earners in all enterprises, the 8-hour day prevailed in practically all mines.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 358	100.0	100.0
8 hours and under	269	75.1	92.5
9 hours	18	5.0	0.6
10 hours	71	19.8	6.9
Bituminous coal	268	100.0	100.0
8 hours	258	96.3	99.6
9 hours	7	2.6	0.3
10 hours	3	1.1	0.1

[1] Exclusive of 3 bituminous coal mines for which number of hours was not reported.

Engines and power.—As shown by Table 5 the total primary horsepower employed in producing enterprises was 23,453, of which 23,160 horsepower was developed by engines and water wheels owned by the enterprise using them and 293 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Gypsum.	Limestone.	All other.
Primary power:					
Aggregate horsepower	23,453	19,118	1,365	2,906	64
Owned	23,160	19,075	1,365	2,656	64
Steam engines—					
Number	447	354	6	85	2
Horsepower	22,715	18,746	1,365	2,540	64
Gas or gasoline engines—					
Number	83	76		7	
Horsepower	375	329		46	
Water wheels—					
Number	1			1	
Horsepower	70			70	
Primary power—Continued.					
Electric motors operated by purchased current—					
Number	10	2		8	
Horsepower	293	43		250	
Electric motors run by current generated by enterprise using:					
Number	38	32	6		
Horsepower	1,420	1,375	45		

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of by-products of coal mines; and to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

The principal increase in the value of products was in the bituminous coal industry, which reported products in 1902 and 1909 valued, respectively, at $8,660,287 and $12,682,106. This represents an increase of $4,021,819, or 46.4 per cent.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$11,461,923	$7,279,272	57.5
Supplies and materials	$1,561,553	$961,414	62.4
Royalties and rent of mines	$349,470	$220,698	58.3
Contract work	[2] $40,791	$48,106	−15.2
Value of products	$13,979,453	$9,659,330	44.7
Primary horsepower	23,528	14,673	60.3

[1] A minus sign (−) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work" in Table 7.

Duplication between manufactures and mining.—In the gypsum industry some of the mining operators subjected the mineral product obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for manufacturing and mining industries in Iowa involves a duplication of $669,734.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.							Nonproducing mines and quarries.[2]
		Total.	Bituminous coal.	Gypsum.	Limestone.	Sandstone.	Lead and zinc.	All other.[1]	
Number of operators	388	373	258	5	89	11	5	5	15
Number of mines and quarries	446	431	311	6	92	12	5	5	15
Capital[3]	$8,760,791	$8,481,483	$6,806,418	$766,512	$761,203	$14,350	$16,200	$116,800	$279,308
Expenses of operation and development	**$13,750,697**	**$13,694,714**	**$12,816,076**	**$487,631**	**$372,337**	**$1,631**	**$5,003**	**$12,036**	**$55,983**
Services:									
Salaried officers of corporations, superintendents, and managers	$323,843	$320,951	$280,146	$22,220	$18,510	...	...	$75	$2,892
Clerks and other salaried employees	$222,124	$220,024	$188,023	$28,598	$3,403	...	...	...	$2,100
Wage earners	$10,898,186	$10,870,446	$10,383,672	$222,483	$252,563	$1,109	$2,840	$7,779	$27,740
Miscellaneous:									
Supplies	$1,313,846	$1,307,919	$1,205,222	$62,097	$39,589	$116	$253	$642	$5,927
Fuel and rent of power	$225,912	$221,740	$125,214	$75,078	$20,967	...	$50	$431	$4,172
Royalties and rent of mines	$349,840	$349,440	$322,673	$16,000	$8,604	$38	$1,810	$315	$400
Taxes	$43,855	$43,574	$38,484	$2,044	$2,679	$73	...	$294	$281
Contract work	$42,470	$40,836	$38,266	...	$45	...	$50	$2,475	$1,634
Rent of offices and other sundry expenses	$330,621	$319,784	$234,376	$59,111	$25,977	$295	...	$25	$10,837
Value of products	**$13,877,781**	**$13,877,781**	**$12,682,106**	**$669,731**	**$499,665**	**$2,958**	**$6,779**	**$18,542**	...
Persons engaged in industry	**20,021**	**19,904**	**18,332**	**699**	**894**	**31**	**14**	**34**	**117**
Proprietors and officials	700	668	514	10	125	11	5	3	32
Proprietors and firm members	451	423	298	...	107	11	5	2	28
Number performing manual labor	298	285	225	...	46	9	5	...	13
Salaried officers of corporations	85	85	79	2	4	...	...	...	...
Superintendents and managers	164	160	137	8	14	...	...	1	4
Clerks and other salaried employees	229	226	195	23	8	...	...	...	3
Wage earners, Dec. 15, 1909, or nearest representative day	19,092	19,010	17,623	566	761	20	9	31	82
Above ground	3,169	3,103	1,783	505	761	20	3	31	66
Below ground	15,923	15,907	15,840	61	...	...	6	...	16
Men 16 years of age and over	18,967	18,885	17,499	566	760	20	9	31	82
Engineers, firemen, mechanics, etc	824	804	752	2	46	...	...	4	20
Above ground	672	652	600	2	46	...	...	4	20
Below ground	152	152	152	...	...	...	...	...	...
Miners, miners' helpers, and quarrymen	13,795	13,764	13,073	62	589	19	9	12	31
Above ground	646	624	...	1	589	19	3	12	22
Below ground	13,149	13,140	13,073	61	...	...	6	...	9
All other employees	4,348	4,317	3,674	502	125	1	...	15	31
Above ground	1,845	1,821	1,178	502	125	1	...	15	24
Below ground	2,503	2,496	2,496	...	...	...	...	...	7
Boys under 16 years of age	125	125	124	...	1	...	...	...	...
Number of wage earners employed on the 15th day of each month:									
January	17,334	17,272	16,552	536	177	...	7	...	62
February	17,325	17,249	16,518	545	167	10	7	2	76
March	17,018	16,928	16,033	560	313	10	7	5	90
April	15,534	15,490	14,379	578	507	10	6	10	44
May	15,088	15,040	13,787	590	612	16	6	29	48
June	14,755	14,703	13,381	601	681	3	8	29	52
July	15,046	14,993	13,709	537	710	1	8	28	53
August	15,775	15,721	14,410	562	729	1	6	13	54
September	16,729	16,659	15,336	697	706	1	6	13	70
October	17,482	17,432	16,132	615	661	3	6	15	50
November	18,110	18,035	16,861	591	561	...	7	15	75
December	18,310	18,236	17,235	566	410	...	9	16	74
Land controlled, acres	**84,695**	**81,458**	**77,796**	**430**	**2,184**	**213**	**253**	**682**	**3,237**
Owned	31,483	29,594	26,771	230	1,810	201	...	582	1,889
Held under lease	53,212	51,864	51,025	200	374	12	253	...	1,348
Mineral land	76,383	73,240	70,192	430	1,655	138	253	572	3,143
Owned	24,156	22,361	20,152	230	1,281	126	...	572	1,795
Held under lease	52,227	50,879	50,040	200	374	12	253	...	1,348
Timber land	780	780	472	...	298	10	...	...	...
Other land	7,532	7,438	7,132	...	231	65	...	10	94
Primary horsepower	**24,228**	**23,453**	**19,118**	**1,365**	**2,906**	...	...	**64**	**775**

---

[1] Includes operators as follows: Clay, 4; peat, 1.

[2] Includes operators as follows: Bituminous coal, 3; iron, 1; lead and zinc, 10; limestone, 1.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or mora states.

KANSAS.

Summary.—The total gross value of the products of the mining industry in Kansas in 1909 amounted to $18,722,634. Deducting from this amount, $392,862, the value of the natural gas purchased and resold and the lead and zinc ore sold by some operators and used as materials by others, leaves $18,329,772 as the net value of the products. Of this amount, the two leading industries, bituminous coal mining and the production of petroleum and natural gas, contributed $16,247,849, or 88.6 per cent. These two industries reported products valued, respectively, at $9,835,614 and $6,412,235. Lead and zinc mining, with products valued at $936,223, and limestone quarrying, with products valued at $807,463, were the industries next in importance.

In the lead and zinc industry as a whole the expenses of operation and development exceeded the value of the products, a result which indicates either that certain enterprises were operated at a loss, or that a considerable sum was expended for development work which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	643	16,441	$18,722,634	$29,118	100.0	100.0	100.0
Individual	174	1,701	1,363,336	7,835	27.1	10.3	7.3
Firm	249	1,334	1,150,847	4,622	38.7	8.1	6.1
Corporation	212	13,227	16,121,583	76,045	33.0	80.5	86.1
Other	8	179	86,868	10,859	1.2	1.1	0.5
Bituminous coal	118	12,791	9,835,614	83,353	100.0	100.0	100.0
Individual	47	924	593,764	12,633	39.8	7.2	6.0
Firm	36	697	360,610	10,017	30.5	5.4	3.7
Corporation	31	10,998	8,807,945	284,127	26.3	86.0	89.6
Other	4	172	73,295	18,324	3.4	1.3	0.7
Petroleum and natural gas	217	1,302	6,681,780	30,792	100.0	100.0	100.0
Individual	34	19	115,745	3,404	15.7	1.5	1.7
Firm	41	25	213,766	5,214	18.9	1.9	3.2
Corporation	139	1,256	6,340,496	45,615	64.1	96.5	94.9
Other	3	2	11,773	3,924	1.4	0.2	0.2
Lead and zinc	189	848	1,059,540	5,606	100.0	100.0	100.0
Individual	16	117	234,707	14,669	8.5	13.8	22.2
Firm	149	348	411,876	2,764	78.8	41.0	38.9
Corporation	24	383	412,957	17,206	12.7	45.2	39.0

Out of a total of 643 operators, 212, or 33 per cent, were corporations. These corporations reported 86.1 per cent of the total value of products and employed 80.5 per cent of all wage earners.

Table 2

	Incorporated.	Unincorporated.
Number of operators	212	431
Number of mines and quarries	146	436
Number of wells	2,702	700
Proprietors and firm members, total	....	1,074
Number performing manual labor	....	575
Salaried employees:		
Officers of corporations	87	....
Superintendents and managers	174	48
Clerks and other salaried employees	344	33
Wage earners, Dec. 15, 1909, or nearest representative day	13,227	3,214
Capital	$39,853,134	$1,944,195
Expenses of operation and development	13,763,522	2,068,265
Salaries—		
Officers of corporations	138,384	....
Superintendents and managers	222,064	40,888
Clerks and other salaried employees	268,379	18,717
Wages	8,333,265	1,303,085
Royalties and rent of mines	1,471,003	194,836
Taxes	138,143	9,427
Supplies and miscellaneous expenses	2,922,591	378,143
Cost of ore purchased and natural gas purchased and resold	269,693	123,169
Value of products	16,121,583	2,601,051

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. For all industries combined, 65.5 per cent of all the wage earners were employed in the 42 enterprises employing over 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	689	100.0	16,441	100.0
No wage earners	74	10.7	....	....
Contract work and part-time employees	113	16.4	....	....
1 to 5	259	37.6	576	3.5
6 to 20	110	16.0	1,231	7.5
21 to 50	67	9.7	2,197	13.4
51 to 100	24	3.5	1,673	10.2
101 to 500	37	5.4	6,772	41.2
Over 500	5	0.7	3,992	24.3
Bituminous coal	164	100.0	12,791	100.0
No wage earners	2	1.2	....	....
Contract work	7	4.3	....	....
1 to 5	23	14.0	67	0.5
6 to 20	33	20.1	377	2.9
21 to 50	42	25.6	1,360	10.6
51 to 100	18	11.0	1,232	9.6
101 to 500	35	21.3	6,542	51.1
Over 500	4	2.4	3,213	25.1
Petroleum and natural gas	217	100.0	1,302	100.0
No wage earners	13	6.0	....	....
Contract work and part-time employees	85	39.2	....	....
1 to 5	105	48.4	166	12.7
6 to 20	8	3.7	107	8.2
Over 20	6	2.8	1,029	79.0
Lead and zinc	189	100.0	848	100.0
No wage earners	48	25.4	....	....
Contract work	19	10.1	....	....
1 to 5	75	39.7	204	24.1
6 to 20	39	20.6	381	44.9
Over 20	8	4.2	263	31.0

In petroleum and natural gas production, 98 enterprises were operated either without any hired labor at all or by contract work or by employees giving but a part of their time to the enterprise. In this industry only 6 enterprises employed over 20 wage earners.

Persons employed in mining.—The bituminous coal-mining industry, which produced 53.7 per cent of the net value of all mining products in 1909, employed 73.5 per cent of the persons engaged in all industries, while the petroleum and natural gas industry, which produced 35 per cent of the product, employed less than 10 per cent of the total persons engaged in mining. Of the total of 18,201 persons employed in all producing enterprises December 15, 1909, or the nearest representative day, 16,441 were wage earners, 686 were salaried employees, and 1,074 were proprietors and firm members, of whom 575 performed manual labor in or about the mines.

Prevailing hours of labor.—In Table 4 the producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 374	100.0	100.0
8 hours and under	184	49.2	86.8
9 hours	98	26.2	4.1
10 hours	91	24.3	8.8
11 hours	1	0.3	0.3
Bituminous coal	154	100.0	100.0
8 hours and under	135	87.7	98.1
9 hours	17	11.0	1.7
10 hours	2	1.3	0.1
Lead and zinc	114	100.0	100.0
8 hours	22	19.3	37.9
9 hours	69	60.5	39.0
10 hours	22	19.3	18.3
11 hours	1	0.9	4.9

[1] Exclusive of petroleum and natural gas, of 1 bituminous coal mine, and 8 lead and zinc mines, for which number of hours was not reported.

The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined and for bituminous coal mines, eight and under was the prevailing number of hours worked per day, while in the lead and zinc industry 62.2 per cent of the wage earners worked nine hours or over per day.

Engines and power.—As shown by Table 5, the total primary horsepower employed in producing enterprises was 66,943, of which 66,255 horsepower was developed by engines and water wheels owned by the enterprises using them and 688 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Petroleum and natural gas.	Lead and zinc.	All other.
Primary power:					
Aggregate horsepower	66,943	19,707	36,846	6,251	4,139
Owned	66,255	19,664	36,441	6,011	4,139
Steam engines—					
Number	662	330	41	224	67
Horsepower	34,044	19,604	6,344	4,716	3,380
Gas or gasoline engines—					
Number	305	12	264	17	12
Horsepower	31,917	56	30,097	1,295	469
Water wheels—					
Number	4	1			3
Horsepower	294	4			290
Electric motors operated by purchased current—					
Number	13	4	7	2	
Horsepower	688	43	405	240	
Electric motors run by current generated by enterprise using:					
Number	48	15	31	1	1
Horsepower	1,607	960	617	25	5

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; and to add to 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6. The principal increase in the value of products occurred in the petroleum and natural gas industry. In 1902 products valued at $1,116,895 were reported by this industry, while in 1909 the oil and gas produced had a value of $6,681,780.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$10,351,532	$5,915,006	75.0
Supplies and materials	$1,917,384	$1,218,192	57.4
Royalties and rent of mines	$1,665,839	$382,181	335.9
Contract work	[1] $369,681	$207,708	78.0
Value of products	$18,386,812	$9,526,060	93.0
Primary horsepower	67,408	18,222	269.9

[1] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the operation of gypsum mines and limestone quarries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries of Kansas involves a duplication of $373,777.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.							Nonproducing mines and quarries.[1]
		Total.	Bituminous coal.	Petroleum and natural gas.	Lead and zinc.	Limestone.	Sandstone.	Gypsum.	
Number of operators	646	643	118	217	189	102	11	6	3
Number of mines, quarries, and wells	3,987	3,984	202	3,402	222	138	13	7	3
Capital[2]	$41,821,529	$41,797,329	$3,011,387	$37,072,298	$466,955	$492,453	$10,450	$743,786	$24,200
Expenses of operation and development	**$16,868,218**	**$15,831,787**	**$9,778,287**	**$4,018,458**	**$1,067,538**	**$669,267**	**$11,027**	**$287,199**	**$36,432**
Services—									
Salaried officers of corporations, superintendents, and managers	$401,336	$401,336	$154,291	$180,479	$29,003	$24,355		$13,208	
Clerks and other salaried employees	$287,646	$287,096	$132,232	$123,325	$7,296	$8,900		$15,343	$550
Wage earners	$9,650,415	$9,636,350	$8,106,670	$516,082	$400,464	$464,932	$9,054	$139,148	$14,065
Miscellaneous—									
Supplies	$1,659,478	$1,645,163	$508,546	$845,783	$167,249	$81,131	$853	$41,601	$14,315
Cost of ore purchased and natural gas purchased and resold	$392,862	$392,862		$269,545	$123,317				
Fuel and rent of power	$268,343	$267,964	$100,975	$7,368	$96,098	$23,212	$118	$40,193	$379
Royalties and rent of mines	$1,665,839	$1,665,839	$266,545	$1,215,270	$167,413	$16,407	$204		
Taxes	$148,155	$147,570	$18,394	$122,230	$1,193	$2,736	$82	$2,935	$585
Contract work	$397,803	$395,947	$49,793	$293,060	$43,670	$8,343	$406	$675	$1,856
Rent of offices and other sundry expenses	$996,342	$991,660	$440,851	$445,317	$31,835	$39,251	$310	$34,096	$4,682
Value of products	**$18,722,634**	**$18,722,634**	**$8,835,614**	**$6,681,780**	**$1,068,540**	**$807,463**	**$19,559**	**$318,678**	
Persons engaged in industry	**18,259**	**18,201**	**13,374**	**1,743**	**1,385**	**1,441**	**46**	**212**	**58**
Proprietors and officials	1,384	1,383	401	300	520	137	15	10	1
Proprietors and firm members	1,075	1,074	283	178	484	114	15		1
Number performing manual labor	576	575	152	12	350	57	4		1
Salaried officers of corporations	87	87	39	37	6	2		3	
Superintendents and managers	222	222	79	85	30	21		7	
Clerks and other salaried employees	378	377	182	141	17	20		17	1
Wage earners, Dec. 15, 1909, or nearest representative day	16,497	16,441	12,791	1,302	848	1,284	31	185	56
Above ground	4,358	4,343	1,123	1,302	427	1,284	31	176	15
Below ground	12,139	12,098	11,668		421			9	41
Men 16 years of age and over	16,477	16,421	12,786	1,302	847	1,270	31	185	56
Engineers, firemen, mechanics, etc	1,169	1,167	512	397	168	86	2	2	2
Above ground	1,044	1,042	387	397	168	86	2	2	2
Below ground	125	125	125						
Miners, miners' helpers, quarrymen, and stonecutters	11,240	11,221	9,972		329	877	25	18	19
Above ground	913	913			2	877	25	9	
Below ground	10,327	10,308	9,972		327			9	19
All other employees	4,068	4,033	2,302	905	350	307	4	165	35
Above ground	2,385	2,372	735	905	256	307	4	165	13
Below ground	1,683	1,661	1,567		94				22
Boys under 16 years of age[3]	20	20	5		1	14			
Number of wage earners employed on the 15th day of each month:									
January	14,510	14,510	12,354	932	552	504	4	164	
February	14,508	14,508	12,362	843	572	559	5	167	
March	14,298	14,298	11,971	839	530	746	8	204	
April	12,886	12,886	10,255	904	550	912	19	246	
May	12,639	12,639	9,906	954	533	1,009	16	221	
June	14,133	14,120	11,032	1,159	514	1,145	18	252	13
July	14,093	14,093	10,970	1,158	587	1,138	23	217	
August	14,115	14,100	11,158	967	568	1,160	23	224	15
September	14,682	14,663	11,673	966	639	1,132	22	231	19
October	15,322	15,294	12,078	1,130	659	1,184	10	233	28
November	15,545	15,506	12,445	1,162	628	1,045	15	211	39
December	15,558	15,502	12,586	1,283	578	859	11	185	56
Land controlled, acres	**599,249**	**598,868**	**83,869**	**502,206**	**1,258**	**9,894**	**915**	**726**	**381**
Owned	79,292	78,917	56,205	14,365	350	6,481	790	726	375
Held under lease	519,957	519,951	27,664	487,841	908	3,413	125		6
Mineral and oil land	591,366	590,985	80,459	502,206	1,247	6,133	260	680	381
Owned	72,123	71,748	53,340	14,365	340	2,813	210	680	375
Held under lease	519,243	519,237	27,119	487,841	907	3,320	50		6
Timber land	135	135				120	15		
Other land	7,748	7,748	3,410		11	3,641	640	46	
Primary horsepower	**67,168**	**66,943**	**19,707**	**36,846**	**6,251**	**2,576**	**73**	**1,490**	**225**

---

[1] Includes operators as follows: Bituminous coal, 2; lead and zinc, 1.
[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.
[3] In the bituminous coal industry 4 boys were employed below ground.

KENTUCKY.

Summary.—The total value of the products of all mines, quarries, and wells in Kentucky in 1909 amounted to $12,100,075. The principal industries were bituminous coal mining, the production of petroleum and natural gas, and limestone quarrying. The combined value of the products of these three industries was $11,747,637, or 97.1 per cent of the products of all mines, quarries, and wells. Of the total for the three industries, the bituminous coal mines reported products valued at $10,003,481, of which $9,921,441 represented the value of coal sold as such, $80,633 the value of coke made at the mines, and $1,407 the value of other products. Petroleum and natural gas wells and limestone quarries reported products valued, respectively, at $892,281 and $851,875.

In the operation of bituminous coal mines, fluorspar mines, and the mines and quarries included in column "All other" of Table 7, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work which added to the value of the mining property.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	437	22,033	$12,100,075	$27,689	100.0	100.0	100.0
Individual	120	1,465	662,860	5,524	27.5	6.6	5.5
Firm[1]	77	1,274	816,590	10,605	17.6	5.8	6.7
Corporation	240	19,294	10,620,625	44,253	54.9	87.6	87.8
Bituminous coal	240	19,655	10,003,481	41,681	100.0	100.0	100.0
Individual	59	942	444,090	7,527	24.6	4.8	4.4
Firm	22	952	546,267	24,830	9.2	4.8	5.5
Corporation	159	17,761	9,013,124	56,686	66.3	90.4	90.1
Petroleum and natural gas	85	206	892,281	10,497	100.0	100.0	100.0
Individual	8	1	8,833	1,104	9.4	0.5	1.0
Firm[1]	37	35	118,221	3,195	43.5	17.0	13.2
Corporation	40	170	765,227	19,131	47.1	82.5	85.8
Limestone	83	1,646	851,875	10,264	100.0	100.0	100.0
Individual	47	474	194,640	4,141	56.6	28.8	22.8
Firm	14	229	131,916	9,423	16.9	13.9	15.5
Corporation	22	943	525,319	23,878	26.5	57.3	61.7

[1] Includes 1 quasi cooperative association and 1 estate.

Out of a total of 437 operators, 240, or 54.9 per cent were corporations. These corporations reported 87.8 per cent of the total value of products and employed 87.6 per cent of all wage earners. As compared with bituminous coal mining, petroleum and natural gas wells and limestone quarrying report a smaller proportion of the business under the corporate form of organization.

Table 2	Incorporated.	Unincorporated.
Number of operators	240	197
Number of mines and quarries	271	171
Number of wells	780	329
Proprietors and firm members, total	....	338
Number performing manual labor	....	75
Salaried employees:		
Officers of corporations	221	....
Superintendents and managers	279	32
Clerks and other salaried employees	460	30
Wage earners, Dec. 15, 1909, or nearest representative day	19,294	2,739
Capital	$25,117,674	$1,668,966
Expenses of operation and development	10,539,710	1,182,012
Salaries—		
Officers of corporations	300,138	....
Superintendents and managers	343,761	23,840
Clerks and other salaried employees	282,816	14,593
Wages	7,009,773	817,741
Royalties and rent of mines	360,749	61,830
Taxes	87,923	8,199
Supplies and miscellaneous expenses	2,154,550	255,809
Value of products	10,620,625	1,479,450

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	460	100.0	22,033	100.0
No wage earners	7	1.5	....	....
Contract work and part-time employees	45	9.8	....	....
1 to 5	84	18.3	249	1.1
6 to 20	111	24.1	1,279	5.8
21 to 50	91	19.8	3,134	14.2
51 to 100	59	12.8	4,432	20.1
Over 100	63	13.7	12,939	58.7
Bituminous coal	263	100.0	19,655	100.0
Contract work	2	0.8	....	....
1 to 5	27	10.3	113	0.6
6 to 20	59	22.4	690	3.5
21 to 50	60	22.8	2,102	10.7
51 to 100	54	20.5	4,068	20.7
Over 100	61	23.2	12,682	64.5
Petroleum and natural gas	85	100.0	206	100.0
No wage earners	4	4.7	....	....
Contract work and part-time employees	42	49.4	....	....
1 to 5	29	34.1	49	23.8
6 to 20	7	8.2	53	25.7
Over 20	3	3.5	104	50.5
Limestone	83	100.0	1,646	100.0
No wage earners	1	1.2	....	....
1 to 5	23	27.7	71	4.3
6 to 20	36	43.4	442	26.9
21 to 50	17	20.5	582	35.4
Over 50	6	7.2	551	33.5

Only 63 enterprises, 61 of which were engaged in the production of bituminous coal, employed more than 100 wage earners each. These enterprises, however, employed 58.7 per cent of the wage earners employed in all producing enterprises. In the petroleum and natural gas industry the average number of employees per enterprise was less than 3. Only 3 of the 85 enterprises in this industry employed over 20 wage earners, and 46 were operated with no wage earners or by contract work or part-time employees.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

The table shows a considerable difference in the number of hours wage earners were employed in the two leading industries. In enterprises weighted according to the number of wage earners in the bituminous coal mines 41.8 per cent were operated on a 10-hour-per-day basis and 33.8 per cent on an 8-hour basis, while in the limestone quarries 87.2 per cent were operated on a 10-hour and none on an 8-hour basis, all working 9 hours or over.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 368	100.0	100.0
8 hours and under	87	23.6	30.5
9 hours	86	23.4	22.8
10 hours	193	52.4	46.4
11 hours	1	0.3	0.1
12 hours	1	0.3	0.1
Bituminous coal	261	100.0	100.0
8 hours and under	86	33.0	33.8
9 hours	67	25.7	24.4
10 hours	108	41.4	41.8
Limestone	81	100.0	100.0
9 hours	18	22.2	11.2
10 hours	62	76.5	87.2
11 hours	1	1.2	1.7

[1] Exclusive of petroleum and natural gas and 1 limestone enterprise for which number of hours was not reported.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 53,203, of which 52,058 horsepower was developed by engines owned by the enterprises using them and 1,145 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	All other.
Primary power:					
Aggregate horsepower	**53,203**	**44,314**	**4,351**	**2,999**	**1,539**
Owned	52,058	43,279	4,351	2,889	1,539
Steam engines—					
Number	754	563	59	84	48
Horsepower	48,551	43,230	1,049	2,733	1,539
Gas or gasoline engines—					
Number	174	10	153	11	......
Horsepower	3,507	49	3,302	156	......
Electric motors operated by purchased current—					
Number	37	34	......	3	......
Horsepower	1,145	1,035	......	110	......
Electric motors run by current generated by enterprise using:					
Number	355	354	......	......	1
Horsepower	11,756	11,736	......	......	20

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines; and to add to 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$8,800,326	$5,802,221	51.7
Supplies and materials	$1,537,544	$1,110,291	38.5
Royalties and rent of mines	$422,702	$156,562	170.0
Contract work	[2] $165,913	$219,627	—24.5
Value of products	$12,100,005	$8,304,706	45.7
Primary horsepower	53,480	18,682	186.3

[1] A minus sign (—) denotes decrease.

[2] Exclusive of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the operation of limestone and sandstone quarries and bituminous coal mines some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Kentucky involves a duplication of $282,069.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.								Nonproducing mines, quarries, and wells.[2]
		Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	Sandstone.	Clay (sold as such).	Fluorspar.	All other.[1]	
Number of operators	441	437	240	85	83	6	10	5	8	4
Number of mines, quarries, and wells	1,553	1,551	310	1,109	99	7	10	6	10	2
Capital[3]	$27,544,519	$26,786,640	$19,464,333	$5,146,459	$759,518	$157,062	$312,817	$162,645	$783,808	$757,879
Expenses of operation and development	**$11,745,688**	**$11,721,722**	**$10,171,949**	**$577,808**	**$838,387**	**$65,514**	**$37,171**	**$49,915**	**$180,878**	**$23,866**
Services—										
Salaried officers of corporations, superintendents, and managers	$673,859	$667,739	$523,880	$35,154	$70,762	$8,360	$3,360	$7,440	$18,783	$6,120
Clerks and other salaried employees	$301,159	$297,409	$266,042	$17,819	$9,275	$950	$720	$583	$2,020	$3,750
Wage earners	$7.834,851	$7,827,514	$7,153,362	$125,332	$376,792	$30,798	$22,336	$20,452	$98,442	$7,337
Miscellaneous—										
Supplies	$1,325,286	$1,322,406	$1,024,667	$172,095	$70,584	$7,581	$4,339	$13,738	$29,402	$2,880
Fuel and rent of power	$219,139	$218,489	$173,453	$6,070	$21,933	$5,225	$733	$3,742	$7,333	$650
Royalties and rent of mines	$422,706	$422,579	$325,239	$68,917	$17,224	$1,140	$250	$1,857	$7,952	$127
Taxes	$96,354	$96,122	$67,946	$22,488	$3,062	$657	$488	$146	$1,335	$232
Contract work	$186,480	$184,903	$86,660	$96,514	$800	....	$180	$949	....	$1,577
Rent of offices and other sundry expenses	$685,754	$684,561	$550,700	$33,519	$68,155	$10,803	$4,765	$1,008	$15,611	$1,193
Value of products	**$12,100,075**	**$12,100,075**	**$10,003,481**	**$892,281**	**$851,875**	**$90,834**	**$46,828**	**$38,895**	**$178,581**	....
Persons engaged in industry	23,455	23,393	20,832	388	1,795	117	108	88	271	62
Proprietors and officials	879	870	537	157	130	11	10	9	16	9
Proprietors and firm members	342	338	118	123	80	2	7	4	4	4
Number performing manual labor	75	75	39	10	20	2	3	1	....	....
Salaried officers of corporations	224	221	173	15	23	4	....	2	4	3
Superintendents and managers	313	311	246	19	27	5	3	3	8	2
Clerks and other salaried employees	496	490	440	23	19	2	1	1	4	6
Wage earners, Dec. 15, 1909, or nearest representative day	22,080	22,033	19,655	206	1,646	104	95	76	251	47
Above ground	5,091	5,044	2,732	206	1,646	104	70	42	244	47
Below ground	16,989	16,989	16,923	....	....	....	25	34	7	....
Men 16 years of age and over	22,004	21,957	19,591	206	1,635	103	95	76	251	47
Engineers, firemen, mechanics, etc.	1,307	1,295	997	136	108	16	4	15	19	12
Above ground	1,163	1,151	857	136	108	16	4	11	19	12
Below ground	144	144	140	....	....	....	....	4	....	....
Miners, miners' helpers, quarrymen, and stonecutters	16,229	16,202	14,814	....	1,209	78	86	35	180	27
Above ground	1,553	1,526	....	....	1,209	78	61	5	173	27
Below ground	14,676	14,876	14,814	....	....	....	25	30	7	....
All other employees	4,468	4,480	3,980	70	318	9	5	26	52	8
Above ground	2,348	2,340	1,860	70	318	9	5	26	52	8
Below ground	2,120	2,120	2,120	....	....	....	....	....	....	....
Boys under 16 years of age[4]	76	76	64	....	11	1	....	....	....	....
Number of wage earners employed on the 15th day of each month:										
January	18,021	18,021	16,992	225	487	67	70	73	107	....
February	17,956	17,954	16,884	218	452	80	70	74	176	2
March	17,577	17,574	16,165	204	781	96	74	74	180	3
April	17,093	17,074	15,189	203	1,186	108	67	77	244	19
May	16,711	16,694	14,662	196	1,344	109	78	77	230	17
June	16,619	16,592	14,609	212	1,300	110	77	82	202	27
July	17,351	17,327	15,191	219	1,399	109	67	79	263	24
August	17,974	17,953	15,651	270	1,472	112	80	43	325	21
September	19,013	18,995	16,743	254	1,499	113	84	43	259	18
October	20,147	20,116	17,874	266	1,521	113	92	41	209	31
November	20,573	20,544	18,568	253	1,292	101	89	26	215	29
December	20,756	20,717	19,127	206	1,012	96	86	25	165	39
Land controlled, acres	**711,803**	**710,636**	**399,848**	**289,236**	**2,312**	**860**	**1,635**	**2,046**	**14,701**	**1,167**
Owned	295,241	294,864	280,053	2,034	2,058	709	1,310	1,876	6,824	377
Held under lease	416,562	415,772	119,793	287,202	254	151	325	170	7,877	790
Mineral and oil land	671,924	870,807	364,869	289,236	1,882	781	1,573	965	11,701	1,117
Owned	260,492	260,165	247,006	2,034	1,628	630	1,248	795	6,824	327
Held under lease	411,432	410,642	117,663	287,202	254	151	325	170	4,877	790
Timber land	19,578	19,548	16,538	....	10	....	....	....	3,000	30
Other land	20,301	20,281	18,639	....	420	79	62	1,081	....	20
Primary horsepower	**53,243**	**53,203**	**44,314**	**4,851**	**2,968**	**587**	**30**	**377**	**545**	**40**

---

[1] Includes operators as follows: Asphaltum and bituminous rock, 2; barytes, 2; iron, 2; lead and zinc, 1; marble, 1.
[2] Includes operators as follows: Bituminous coal, 1; lithographic stone, 1; petroleum and natural gas, 2.
[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.
[4] In the bituminous coal industry 49 boys were employed below ground.

LOUISIANA.

Summary.—Of the 33 producing operators in Louisiana in 1909, 31 were engaged in the production of petroleum and natural gas and 1 each in the production of sulphur and limestone. In order to avoid publishing data from which could be ascertained the operations of an individual enterprise it is necessary to confine the statistics to all industries combined. For the same reason it is necessary to omit entirely the reports from two enterprises engaged in development work only.

The total gross value of the products of all industries in 1909 was $6,547,050. Deducting from this amount, $7,200, the value of the natural gas sold by some operators and resold by others, leaves $6,539,850 as the net value of the products. The total expenses of operation and development, exclusive of the cost of the natural gas purchased, amounted to $6,634,355, which was $94,505 in excess of the value of products. This was due to the fact that the value of the product of the sulphur industry included only the value of the sulphur which was marketed during the year, while the expenses given include the cost of mining both that which was sold and that which was added to the stock on hand.

Table 1 presents detailed statistics for the three industries combined.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 1	All industries.[1]
Number of operators	33
Number of mines, quarries, and wells	248
Capital [2]	$13,207,232
Expenses of operation and development	**$6,641,555**
Services—	
Salaried officers of corporations, superintendents, and managers	$148,386
Clerks and other salaried employees	$178,645
Wage earners	$872,627
Miscellaneous—	
Supplies	$859,456
Cost of natural gas purchased and resold	$7,200
Fuel and rent of power	$726,971
Royalties and rent of mines	$496,198
Taxes	$67,501
Contract work	$62,440
Rent of offices and other sundry expenses	$3,222,131
Value of products	**$6,547,050**
Persons engaged in industry	**1,163**
Proprietors and officials	131
Proprietors and firm members, total	72
Number performing manual labor	1
Salaried officers of corporations	26
Superintendents and managers	33
Clerks and other salaried employees	79
Wage earners, Dec. 15, 1909, or nearest representative day [2] (all above ground)	953
Engineers, fireman, mechanics, etc	494
Quarrymen	71
All other employees [3]	388

	All industries.
Number of wage earners employed on the 15th day of each month:	
January	1,016
February	973
March	860
April	944
May	971
June	951
July	908
August	887
September	868
October	936
November	875
December	918
Land controlled, acres	**102,251**
Owned	23,271
Held under lease	78,980
Mineral and oil land	98,169
Owned	19,189
Held under lease	78,980
Other land	4,082
Primary horsepower	**8,445**
Steam engines—	
Number	249
Horsepower	8,250
Gas or gasoline engines—	
Number	10
Horsepower	195

---

[1] Includes operators as follows: Petroleum and natural gas, 31; limestone, 1; sulphur, 1.

[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[3] Includes 1 boy under 16 years of age.

Character of organization.—Table 2 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 3 gives further details for incorporated enterprises distinguished from those which are unincorporated. Of the 33 operators, 27 were corporations. These corporations reported 99.2 per cent of the total value of products and employed 99.4 per cent of all wage earners.

Table 2 INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	33	953	$6,547,050	$198,395	100.0	100.0	100.0
Individual	3		24,094	8,031	9.1		0.4
Firm	3	6	31,357	10,452	9.1	0.6	0.5
Corporation	27	947	6,491,599	240,430	81.8	99.4	99.2

Table 3	Incorporated.	Unincorporated.
Number of operators	27	6
Number of mines and quarries	2	....
Number of wells	237	9
Proprietors and firm members, total	....	72
Number performing manual labor	....	1
Salaried employees:		
Officers of corporations	26	....
Superintendents and managers	29	4
Clerks and other salaried employees	79	....
Wage earners, Dec. 15, 1909, or nearest representative day	947	6
Capital	$12,966,249	$240,983
Expenses of operation and development	6,520,648	120,907
Salaries—		
Officers of corporations	65,945	....
Superintendents and managers	76,396	6,045
Clerks and other salaried employees	177,925	720
Wages	868,188	4,439
Royalties and rent of mines	492,353	3,845
Taxes	65,782	1,719
Supplies and miscellaneous expenses	4,766,859	104,139
Cost of natural gas purchased and resold	7,200	....
Value of products	6,491,599	55,451

Comparison of mining industries: 1902–1909.—Table 4 presents for 1909 and 1902 such items as are comparable for the two years. Substantially all the increase in mining was due to the development of the sulphur deposits.

Table 4	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$1,199,658	$41,977	2,757.9
Supplies and materials	$1,586,427	$7,354	21,472.3
Royalties and rent of mines	$496,198	$23,207	2,038.1
Contract work	[2] $60,310	$105,858	−43.0
Value of products	[3] $6,539,850	$279,327	2,241.3
Primary horsepower	8,445	4,440	90.2

[1] A minus sign (—) denotes decrease.

[2] Exclusive of $2,130, the wages of part-time employees for the petroleum and natural gas industry.

[3] Exclusive of $7,200, the value of natural gas sold by some operators and resold by others.

MAINE.

Summary.—The number of producing mines and quarries in Maine in 1909 was 102, of which 89 were granite quarries. The total value of the products of all mining enterprises was $2,056,063. Of this amount the granite quarries contributed $1,761,801, or 85.7 per cent, the greater part of the remainder being contributed by the slate quarries. Besides giving details for all producing enterprises combined, Table 6 gives similar information with regard to the granite, slate, and feldspar quarries separately, but in most of the other tables separate statistics are given for granite quarries only.

Character of ownership.—As shown in Table 1, out of 97 operators of producing mining enterprises in the state of Maine, 26 were corporations. These corporations, however, reported 69.7 per cent of the total value of the products of the state, and employed 70.6 per cent of all wage earners.

Table 1

PRODUCING ENTERPRISES: 1909

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	97	2,471	$2,056,063	$21,187	100.0	100.0	100.0
Individual	48	334	296,635	6,180	49.5	13.5	14.4
Firm	23	393	325,517	14,153	23.7	15.9	15.8
Corporation	26	1,744	1,433,911	55,150	26.8	70.6	69.7
Granite	85	2,132	1,761,801	20,727	100.0	100.0	100.0
Individual	43	315	290,839	6,764	50.6	14.8	16.5
Firm	23	393	325,517	14,153	27.1	18.4	18.5
Corporation	19	1,424	1,145,445	60,287	22.4	66.8	65.0

Size of enterprises.—In Table 2 the mining enterprises of the state are classified according to the number of wage earners employed. Of the 97 producing enterprises reported in 1909 only 22 employed more than 20 wage earners each. These enterprises, however, reported 80 per cent of the total number of wage earners employed in all producing mining enterprises in the state. More than half of this total number of wage earners were in the seven enterprises which employed from 101 to 500 wage earners each.

Table 2

PRODUCING ENTERPRISES: 1909

INDUSTRY AND WAGE EARNERS PER ENTERPRISES.	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	97	100.0	2,471	100.0
No wage earners	2	2.1	....	....
1 to 5	40	41.2	97	3.9
6 to 20	33	34.0	397	16.1
21 to 50	10	10.3	368	14.9
51 to 100	5	5.2	353	14.3
101 to 500	7	7.2	1,256	50.8
Granite	85	100.0	2,132	100.0
No wage earners	2	2.4	....	....
1 to 5	36	42.4	88	4.1
6 to 20	31	36.5	377	17.7
21 to 50	5	5.9	183	8.6
51 to 100	5	5.9	353	16.6
101 to 500	6	7.1	1,131	53.0

Prevailing hours of labor.—In Table 3 all producing enterprises, except those which employed no wage earners, have been classified according to the prevailing hours of labor per day in each enterprise. The table shows the percentage of the total number of enterprises falling into each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be distinctly borne in mind that this latter distribution does not show the proportion of the total number of wage earners working the specified number of hours per day, since in many cases some of the employees work a greater or less number of hours than those generally prevailing in the enterprise. Enterprises in which the prevailing hours were eight and under, constituted 58.9 per cent of all enterprises in 1909 and employed 73.8 per cent of the wage earners.

Table 3

PRODUCING ENTERPRISES: 1909

INDUSTRY AND HOURS PER DAY.	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	85	100.0	100.0
8 hours and under	56	58.9	73.8
9 hours	26	27.4	18.5
10 hours	12	12.6	7.3
11 hours	1	1.1	0.4
Granite	83	100.0	100.0
8 hours	55	66.3	85.4
9 hours	22	26.5	13.6
10 hours	6	7.2	1.1

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown in Table 4, was 8,141, of which 7,671 horsepower was developed by engines and water wheels owned by the enterprise using them, and 470 by electric motors operated by purchased current.

Table 4

PRODUCING ENTERPRISES: 1909

CHARACTER OF POWER.	All industries.	Granite.	Slate.	All other.
Primary power:				
Aggregate horsepower	8,141	7,158	743	240
Owned	7,671	7,078	413	180
Steam engines:				
Number	156	139	15	2
Horsepower	7,441	6,911	410	120
Gas or gasoline engines:				
Number	13	10	1	2
Horsepower	130	117	3	10
Water wheels:				
Number	2	1	....	1
Horsepower	100	50	....	50
Electric motors operated by purchased current:				
Number	8	2	5	1
Horsepower	470	80	330	60
Electric motors run by current generated by enterprise using:				
Number	14	13	1	......
Horsepower	221	186	35	......

Comparison of mining industries: 1902–1909.—In order to make a comparison between the census of 1909 and the preceding census of mines and quarries, that of 1902, it is necessary to include for 1909 figures for the production of lime, which was included in the report on mines and quarries for 1902, but classified as a manufacturing industry in 1909. In any case, only the few items specified in Table 5 can be compared for the two years.

Table 5	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$1,696,617	$2,478,603	−31.5
Supplies and materials	$1,032,965	$476,964	116.5
Royalties and rent of mines	$22,279	$12,714	75.2
Contract work	$14,448	.....	.....
Value of products	$3,270,766	$3,656,134	−10.5
Primary horsepower	8,346	6,939	20.3

[1] A minus sign (—) denotes decrease.

Development work.—In addition to the 97 operators of producing enterprises in 1909 there were 3 operators who reported the expenditure of $13,474 on properties which did not reach the productive stage during the year.

Duplication between manufactures and mining.—In a number of industries some of the mining operators subjected the mineral product obtained to certain manufacturing processes on the premises before marketing. Such enterprises have been included in the statistics both for manufactures and for mining. As a result the combined value of products for the manufacturing and mining industries of Maine involves a duplication of $1,787,056.

Of the amount reported as duplication the greater portion represented duplication in the value of products of granite quarries, at many of which the stone was prepared for final use before marketing.

DETAILED STATISTICS FOR PRODUCING MINES AND QUARRIES: 1909.

Table 6	PRODUCING MINES AND QUARRIES: 1909				
	Total.	Granite.	Slate.	Feldspar.	All other.[1]
Number of operators	97	85	5	3	4
Number of mines and quarries	102	89	6	3	4
Capital	$3,825,931	$2,660,777	$1,068,623	$84,631	$11,900
Expenses of operation and development	**$1,876,341**	**$1,597,683**	**$227,701**	**$47,330**	**$3,627**
Services:					
Salaried officers of corporations, superintendents, and managers	$87,779	$65,234	$16,845	$5,700	.....
Clerks and other salaried employees	$31,847	$29,130	$1,917	$800	.....
Wage earners	$1,332,242	$1,167,136	$145,155	$17,472	$2,479
Miscellaneous:					
Supplies	$219,579	$181,547	$26,540	$10,537	$955
Fuel and rent of power	$84,683	$60,133	$19,860	$4,654	$36
Royalties and rent of mines	$16,302	$13,202	$3,000	$100	.....
Taxes	$16,241	$13,263	$2,805	$76	$97
Contract work	$6,728	$229	$1,718	$4,781	.....
Rent of offices and other sundry expenses	$80,940	$67,809	$9,861	$3,210	$60
Value of products	**$2,056,063**	**$1,761,801**	**$223,803**	**$65,197**	**$5,256**
Persons engaged in industry	**2,686**	**2,319**	**295**	**51**	**21**
Proprietors and officials	168	148	10	6	4
Proprietors and firm members	98	93	.....	1	4
Number performing manual labor	60	57	.....	1	2
Salaried officers of corporations	16	8	5	3	.....
Superintendents and managers	54	47	5	2	.....
Clerks and other salaried employees	47	39	6	2	.....
Wage earners, Dec. 15, 1909, or nearest representative day[2]	2,471	2,132	279	43	17
Above ground	2,488	2,132	256	43	17
Below ground	23	.....	23	.....	.....
Persons engaged in industry—Continued.					
Wage earners, Dec. 15, 1909—Continued.					
Engineers, firemen, mechanics, etc. (above ground)	368	243	121	2	2
Miners and miners' helpers, quarrymen, and stonecutters	1,755	1,556	150	41	8
Above ground	1,732	1,556	127	41	8
Below ground	23	.....	23	.....	.....
All other wage earners (above ground)	348	333	8	.....	7
Number of wage earners employed on the 15th day of each month:					
January	1,327	996	285	38	8
February	1,163	838	278	36	11
March	1,499	1,169	281	38	11
April	1,883	1,562	263	47	11
May	2,314	1,954	294	55	11
June	2,549	2,203	290	49	7
July	2,660	2,304	305	47	4
August	2,600	2,239	306	48	7
September	2,725	2,362	309	50	4
October	2,526	2,166	301	53	6
November	2,427	2,106	279	41	1
December	2,053	1,713	289	41	10
Land controlled, acres	**11,655**	**3,811**	**7,550**	**240**	**54**
Owned	9,934	2,796	6,950	140	48
Held under lease	1,721	1,015	600	100	6
Mineral land	5,347	2,927	2,175	200	45
Owned	3,899	2,185	1,575	100	39
Held under lease	1,448	742	600	100	6
Timber land	5,695	675	5,000	20	.....
Other land	613	209	375	20	9
Primary horsepower	**8,141**	**7,158**	**743**	**210**	**30**

[1] Includes operators as follows: Bluestone, 2; peat, 1; and mica, 1.

[2] All employees are men 16 years of age and over.

MARYLAND.

Summary.—The value of the products of all mines and quarries in Maryland, in 1909, was $5,782,045. Of this amount $4,483,137, or 77.5 per cent, represented the value of the products of bituminous coal mines, and $1,075,726, or 18.6 per cent, represented the value of the products of all stone quarries.

For the five enterprises shown in column "All other" of Table 7 the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**126**	**7,745**	**$5,782,045**	**$45,889**	**100.0**	**100.0**	**100.0**
Individual	42	523	319,586	7,609	33.3	6.8	5.5
Firm [1]	24	320	265,406	11,059	19.0	4.1	4.6
Corporation	60	6,902	5,197,053	86,618	47.6	89.1	89.9
Bituminous coal	**40**	**5,798**	**4,483,137**	**112,078**	**100.0**	**100.0**	**100.0**
Individual	10	147	78,390	7,839	25.0	2.5	1.7
Firm	6	59	35,028	5,838	15.0	1.0	0.8
Corporation	24	5,592	4,369,719	182,072	60.0	96.4	97.5

[1] Includes 1 enterprise operated by an administrator.

Table 2

	Incorporated.	Unincorporated.
Number of operators	60	66
Number of mines and quarries	95	78
Proprietors and firm members, total	....	101
Number performing manual labor	....	48
Salaried employees:		
Officers of corporations	52	....
Superintendents and managers	112	14
Clerks and other salaried employees	164	13
Wage earners, Dec. 15, 1909, or nearest representative day	6,902	843
Capital	$24,731,549	$438,129
Expenses of operation and development	4,615,773	390,384
Salaries—		
Officers of corporations	64,580	....
Superintendents and managers	114,482	17,547
Clerks and other salaried employees	124,648	7,190
Wages	3,085,072	254,610
Royalties and rent of mines	111,132	22,654
Taxes	86,497	2,062
Supplies and miscellaneous expenses	1,029,362	86,321
Value of products	5,197,053	584,992

Out of a total of 126 operators, 60, or 47.6 per cent, were corporations. These corporations reported 89.9 per cent of the total value of products and employed 89.1 per cent of all wage earners.

Size of enterprises.—Table 3 classifies the producing mining enterprises of the state according to the number of wage earners employed per enterprise or operating unit. Of the 7,745 wage earners employed in all enterprises, 5,358, or 69.2 per cent, were employed in the 15 enterprises employing over 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**129**	**100.0**	**7,745**	**100.0**
No wage earners	5	3.9	....	....
Contract work	3	2.3	....	....
1 to 5	30	23.3	101	1.3
6 to 20	38	29.5	442	5.7
21 to 50	24	18.6	842	10.9
51 to 100	14	10.9	1,002	12.9
Over 100	15	11.6	5,358	69.2
Bituminous coal	**43**	**100.0**	**5,798**	**100.0**
1 to 5	12	27.9	39	0.7
6 to 20	3	7.0	23	0.4
21 to 50	9	20.9	336	5.8
51 to 100	7	16.3	501	8.6
Over 100	12	27.9	4,899	84.5

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. For all industries combined, and for enterprises engaged in the production of bituminous coal, the most important industry, a day of 10 hours prevailed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	**121**	**100.0**	**100.0**
8 hours and under	12	9.9	1.8
9 hours	22	18.2	13.9
10 hours	87	71.9	84.3
Bituminous coal	**43**	**100.0**	**100.0**
8 hours and under	6	14.0	0.4
9 hours	6	14.0	12.7
10 hours	31	72.1	86.9

Engines and power.—As shown by Table 5, the aggregate horsepower employed in the producing mining enterprises of the state was 18,118, of which 17,615 was developed by engines and water wheels owned by the enterprises using them, and 503 horsepower by electric motors operated by purchased current.

Table 5	PRODUCING ENTERPRISES: 1909				
CHARACTER OF POWER.	Total.	Bituminous coal.	Granite.	Trap-rock.	All other.
Primary power:					
Aggregate horsepower	**18,118**	**9,845**	**3,233**	**1,442**	**3,598**
Owned	17,615	9,830	3,233	1,367	3,185
Steam engines—					
Number	352	194	75	23	60
Horsepower	17,262	9,795	3,225	1,367	2,875
Gas or gasoline engines—					
Number	3	2	1		
Horsepower	43	35	8		
Water wheels—					
Number	5				5
Horsepower	310				310
Electric motors operated by purchased current—					
Number	27	3		3	21
Horsepower	503	15		75	413
Electric motors run by current generated by enterprise using:					
Number	40	40			
Horsepower	1,273	1,273			

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6

Table 6	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$3,816,561	$4,696,260	−18.7
Supplies and materials	$714,571	$807,796	−11.5
Royalties and rent of mines	$136,772	$141,570	−3.4
Contract work	$11,148	$8,499	31.2
Value of products	$6,164,122	$7,162,113	−13.9
Primary horsepower	19,060	12,400	53.7

[1] A minus sign (—) denotes decrease.

Duplication between manufactures and mining.—In the production of granite, quartz, slate, and talc and soapstone some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries in Maryland involves a duplication of $495,069.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	PRODUCING MINES AND QUARRIES.											
	Total.	Bituminous coal.	Iron.	Granite.	Traprock.	Limestone.	Slate.	Sandstone.	Quartz.	Clay (sold as such).	Feldspar.	All other.[1]
Number of operators	126	40	12	16	14	10	6	4	5	11	3	5
Number of mines and quarries	173	70	13	23	15	14	6	4	5	12	5	6
Capital [2]	$25,169,678	$22,871,136	$62,658	$486,918	$604,125	$254.361	$538,500	$42,923	$94,707	$78,450	$2,400	$133,500
Expenses of operation and development	**$5,008,157**	**$3,941,369**	**$41,196**	**$483,124**	**$214,380**	**$50,169**	**$110,538**	**$16,065**	**$29,042**	**$23,971**	**$13,217**	**$83,248**
Services:												
Salaried officers of corporations, superintendents, and managers	$196,609	$111,261	$2,520	$38,640	$13,196	$2,421	$10,340	$1,025	$4,526	$2,520		$10,160
Clerks and other salaried employees	$131,838	$110,855	$810	$12,209	$2,426		$780	$1,010	$1,000			$2,748
Wage earners	$3,339,682	$2,713,294	$24,989	$292.120	$114,532	$37,472	$78,545	$11,909	$12,178	$12,478	$5,810	$36,355
Miscellaneous:												
Supplies	$478,555	$372,508	$3,893	$33,353	$43,886	$5,099	$5,703	$1,360	$737	$4,937	$271	$6,808
Fuel and rent of power	$104,156	$35,719	$4,610	$23,671	$12,479	$2,654	$11,343	$323	$5,680	$397	$140	$7,140
Royalties and rent of mines	$133,786	$95,757	$1,343	$15,509	$7,269	$1,035	$1,796	$287	$600	$535	$2,291	$7,364
Taxes	$88,559	$79,726	$582	$2,619	$955	$374	$1,343	$43	$497	$496		$1,924
Contract work	$8,393	$1,653	$395						$2,355		$3,900	
Rent of offices and other sundry expenses	$524,669	$420,586	$1,964	$65,003	$19,637	$1,054	$686	$108	$1,469	$2,608	$805	$10,749
Value of products	**$5,782,045**	**$4,483,137**	**$44,341**	**$556,476**	**$230,384**	**$143,258**	**$129,538**	**$16,070**	**$61,078**	**$31,664**	**$27,161**	**$58,938**
Persons engaged in industry	**8,201**	**6,969**	**146**	**781**	**531**	**159**	**236**	**44**	**45**	**78**	**24**	**88**
Proprietors and officials	279	130	20	41	27	14	13	4	8	13	1	8
Proprietors and firm members	101	28	18	16	11	12		2	3	10	1	1
Number performing manual labor	48	13	13	4	6	4				6	1	1
Salaried officers of corporations	52	20		12	5		7		2	1		5
Superintendents and managers	126	82	2	14	11	2	6	2	3	2		2
Clerks and other salaried employees	177	141	1	20	6		1	2	2			4
Wage earners, Dec. 15, 1909, or nearest representative day	7,745	5,798	125	720	498	145	222	38	35	65	23	76
Above ground	2,841	972	125	720	498	145	161	38	35	57	23	67
Below ground	4,904	4,826					61			8		9
Men 16 years of age and over	7,556	5,634	114	712	497	144	220	38	35	63	23	76
Engineers, firemen, mechanics, etc.	407	252	6	66	28	4	29	4	3	3	2	10
Above ground	365	212	6	66	28	4	27	4	3	3	2	10
Below ground	42	40					2					
Miners, miners' helpers, quarrymen, and stonecutters	5,242	3,833	65	553	454	43	151	26	7	33	21	56
Above ground	1,338		65	553	454	43	97	26	7	25	21	47
Below ground	3,904	3,833					54			8		9
All other employees	1,907	1,549	43	93	15	97	40	8	25	27		10
Above ground	1,092	739	43	93	15	97	35	8	25	27		10
Below ground	815	810					5					
Boys under 16 years of age[3]	189	164	11	8	1	1	2			2		
Number of wage earners employed on the 15th of each month:												
January	7,003	5,825	110	549	91	62	216	25	28	24	18	55
February	6,981	5,753	106	579	106	50	217	18	28	51	18	55
March	7,020	5,716	111	546	164	58	219	22	35	61	23	65
April	7,040	5,570	110	606	240	75	223	17	35	71	23	70
May	7,061	5,528	117	631	275	93	227	17	32	53	18	70
June	7,184	5,533	119	733	284	93	224	27	32	51	18	70
July	7,212	5,383	114	765	412	107	224	37	32	47	18	73
August	7,127	5,257	120	791	423	122	223	30	32	38	18	73
September	7,362	5,409	121	777	502	123	220	36	32	51	18	73
October	7,421	5,445	125	783	513	127	223	32	32	53	23	65
November	7,434	5,505	125	741	490	161	195	45	35	54	23	60
December	7,432	5,772	128	707	293	132	195	35	35	52	23	60
Land controlled, acres	109,419	92,814	10,580	885	1,159	884	378	343	555	456	637	728
Owned	102,189	88,129	10,490	626	296	871	364	124	530	447		312
Held under lease	7,230	4,685	90	259	863	13	14	219	25	9	637	416
Mineral land	73,564	68,220	180	476	1,125	884	378	343	235	456	637	630
Owned	66,595	63,596	90	357	282	871	364	124	210	447		254
Held under lease	6,969	4,624	90	119	843	13	14	219	25	9	637	376
Timber land	18,519	8,345	10,000	40					120			14
Other land	17,336	16,249	400	369	34				200			84
Primary horsepower	18,118	9,845	391	3,233	1,442	287	942	175	545	203	10	1,045

---

[1] Includes operators distributed as follows: Copper, 1; marble, 2; mineral pigments, 1; talc and soapstone, 1.
[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.
[3] In the bituminous coal industry 143 boys were employed below ground.

MASSACHUSETTS.

Summary.—The production of granite was the leading industry in Massachusetts in 1909. The value of the output of these quarries was $2,185,986, which represented 63 per cent of the total value of the products of all mines and quarries. Traprock, sandstone, and marble quarries reported products with a combined value of $1,113,472, which, added to the value of the granite, give an aggregate value of $3,299,458 for the products of the stone quarries in the state in 1909.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	139	3,508	$3,467,888	$24,949	100.0	100.0	100.0
Individual	69	869	778,595	11,284	49.6	24.8	22.5
Firm	22	318	369,038	16,774	15.8	9.1	10.6
Corporation	48	2,321	2,320,255	48,339	34.5	66.2	66.9
Granite	82	2,278	2,185,986	26,658	100.0	100.0	100.0
Individual	47	598	545,635	11,609	57.3	26.3	25.0
Firm	15	229	254,251	16,950	18.3	10.1	11.6
Corporation	20	1,451	1,386,100	69,305	24.4	63.7	63.4
Traprock	23	581	590,913	25,692	100.0	100.0	100.0
Individual[1]	11	133	115,843	10,531	47.8	22.9	19.6
Corporation	12	448	475,070	39,589	52.2	77.1	80.4

[1] Includes 1 firm.

Table 2

	Incorporated.	Unincorporated.
Number of operators	48	91
Number of mines and quarries	53	94
Proprietors and firm members, total		121
Number performing manual labor		43
Salaried employees:		
Officers of corporations	28	
Superintendents and managers	48	25
Clerks and other salaried employees	54	21
Wage earners, Dec. 15, 1909, or nearest representative day	2,321	1,187
Capital	$3,953,557	$1,100,536
Expenses of operation and development	2,075,902	911,273
Salaries—		
Officers of corporations	70,670	
Superintendents and managers	61,791	21,222
Clerks and other salaried employees	45,256	14,419
Wages	1,365,018	601,979
Royalties and rent of mines	38,107	17,302
Taxes	29,722	10,465
Supplies and miscellaneous expenses	465,338	245,886
Value of products	2,320,255	1,147,633

Out of a total of 139 operators, 48 were corporations. These corporations reported 66.9 per cent of the total value of products and employed 66.2 per cent of all wage earners.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. In the granite quarries 32.1 per cent of all wage earners were employed in three enterprises employing over 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	139	100.0	3,508	100.0
No wage earners	1	0.7		
Contract work	1	0.7		
1 to 5	33	23.7	110	3.1
6 to 20	58	41.7	688	19.6
21 to 50	26	18.7	766	21.8
51 to 100	16	11.5	1,061	30.2
Over 100	4	2.9	883	25.2
Granite	82	100.0	2,278	100.0
No wage earners	1	1.2		
1 to 5	19	23.2	63	2.8
6 to 20	36	43.9	419	18.4
21 to 50	14	17.1	421	18.5
51 to 100	9	11.0	643	28.2
Over 100	3	3.7	732	32.1
Traprock	23	100.0	581	100.0
Contract work	1	4.3		
1 to 20	13	56.5	148	25.5
21 to 50	6.	26.1	167	28.7
Over 50	3	13.0	266	45.8

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except one employing no wage earners and one operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	139	100.0	100.0
8 hours	53	38.1	46.4
9 hours	63	45.3	34.1
10 hours	22	15.8	18.5
12 hours	1	0.7	1.0
Granite	81	100.0	100.0
8 hours	48	59.3	70.1
9 hours	32	39.5	29.6
10 hours	1	1.2	0.3
Traprock	22	100.0	100.0
8 hours	1	4.5	2.8
9 hours	12	54.5	31.3
10 hours	9	40.9	65.9

The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in many cases, some of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

In 46.4 per cent of the enterprises, weighted according to the number of wage earners, a day of 8 hours prevailed.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in all producing enterprises was 15,031, of which 14,578 was developed by engines and water wheels owned by the enterprises using them and 453 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909					
	Total.	Granite.	Trap-rock.	Sandstone.	Marble.	All other.
Primary power: **Aggregate horsepower.**	**15,031**	**9,172**	**2,296**	**962**	**1,339**	**1,262**
Owned	14,578	9,067	2,033	877	1,339	1,262
Steam engines—						
Number	315	223	26	26	25	15
Horsepower	13,310	8,887	2,033	829	916	645
Gas or gasoline engines—						
Number	14	7		1	1	5
Horsepower	700	180		20	198	302
Water wheels—						
Number	6			1	3	2
Horsepower	568			28	225	315
Electric motors operated by purchased current—						
Number	13	5	6	2		
Horsepower	453	105	263	85		
Electric motors run by current generated by enterprise using:						
Number	28	15	2		7	4
Horsepower	676	425	6		197	48

Comparison of mining industries: 1902-1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for enterprises operated by governmental institutions and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$2,516,534	$2,739,230	−8.1
Supplies and materials	$854,090	$727,665	17.4
Royalties and rent of mines	$58,589	$44,325	32.2
Contract work	$18,637	$1,853	905.8
Value of products	$4,332,218	$4,499,401	−3.7
Primary horsepower	15,620	11,170	39.8

[1] A minus sign (—) denotes decrease.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Massachusetts involves a duplication of $2,151,708. Of this amount $1,743,400 represents the value of granite duplicated, $252,557 the value of marble, and $106,831 and $48,920, respectively, the value of sandstone and talc and soapstone.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	PRODUCING MINES AND QUARRIES.							
	Total.	Granite.	Traprock.	Sandstone.	Marble.	Talc and soapstone.	Clay. (sold as such).	All other.[1]
Number of operators	139	82	23	13	8	3	3	7
Number of mines and quarries	147	86	24	15	8	4	3	7
Capital	[2]$5,054,093	$3,149,136	$286,780	$341,209	$499,635	$182,388	$6,150	$419,496
Expenses of operation and development	**$2,987,176**	**$1,873,830**	**$486,390**	**$207,924**	**$222,816**	**$29,736**	**$1,063**	**$85,816**
Services—								
Salaried officers of corporations, superintendents, and managers	[3]$153,683	$81,888	$21,155	$5,860	$8,650	$5,065	....	$3,365
Clerks and other salaried employees	[3]$59,675	$38,521	$7,504	$2,418	$3,123	$659	....	$1,950
Wage earners	$1,966,997	$1,402,344	$246,131	$130,946	$119,147	$9,996	$546	$57,887
Miscellaneous—								
Supplies	$363,698	$197,135	$48,959	$40,424	$59,287	$4,085	$200	$13,608
Fuel and rent of power	$153,258	$86,770	$31,779	$10,853	$14,499	$3,342	$25	$5,990
Royalties and rent of mines	$55,409	$17,552	$31,126	$4,040	$2,691	....	....	....
Taxes	[3]$40,187	$29,920	$3,598	$2,563	$1,984	$1,080	$89	$709
Contract work	$16,272	$3,704	$10,068	....	....	$2,500	....	....
Rent of offices and other sundry expenses	[3]$177,996	$116,796	$66,070	$10,820	$13,435	$3,009	$203	$2,107
Value of products	**$3,467,888**	**$2,185,986**	**$590,913**	**$270,002**	**$252,557**	**$48,920**	**$1,706**	**$117,802**
Persons engaged in industry	[4]3,805	2,456	634	247	287	42	11	119
Proprietors and officials	[4]222	135	36	16	16	4	3	6
Proprietors and firm members	121	83	12	11	9	....	3	3
Number performing manual labor	43	37	1	1	....	....	1	3
Salaried officers of corporations	[4]28	13	7	....	1	1	....	....
Superintendents and managers	73	39	17	5	6	3	....	3
Clerks and other salaried employees	[4]75	43	17	3	4	2	....	3
Wage earners, Dec. 15, 1909, or nearest representative day	3,508	2,278	581	228	267	36	8	110
Above ground	3,428	2,278	581	228	267	16	8	50
Below ground	80	....	....	....	....	20	....	60
Men 16 years of age and over	3,493	2,267	577	228	267	36	8	110
Engineers, firemen, mechanics, etc	461	314	69	21	42	7	....	8
Above ground	459	314	69	21	42	5	....	8
Below ground	2	....	....	....	....	2	....	....
Miners, miners' helpers, quarrymen, and stonecutters	2,285	1,450	455	171	103	20	1	85
Above ground	2,207	1,450	455	171	103	2	1	25
Below ground	78	....	....	....	....	18	....	60
All other employees (all above ground)	747	503	53	36	122	9	7	17
Boys under 16 years of age (all above ground)	15	11	4	....	....	....	....	....
Number of wage earners employed on the 15th day of each month:								
January	2,297	1,684	159	117	176	30	....	131
February	2,323	1,752	112	124	169	28	....	138
March	2,670	2,087	117	148	172	30	....	116
April	3,282	2,342	381	197	208	29	....	125
May	3,657	2,550	538	204	212	31	....	122
June	3,583	2,333	618	216	236	32	1	147
July	3,799	2,489	664	233	241	31	1	140
August	3,793	2,496	695	203	241	32	7	119
September	3,850	2,569	650	249	250	28	7	97
October	3,741	2,468	652	244	250	29	....	98
November	3,430	2,233	691	230	249	28	....	99
December	3,065	1,986	534	147	258	31	....	109
Land controlled, acres	8,077	3,879	479	600	677	774	17	1,651
Owned	7,205	3,514	328	579	582	534	17	1,651
Held under lease	872	365	151	21	95	240	....	....
Mineral land	5,716	2,914	478	600	212	395	17	1,100
Owned	4,879	2,549	327	579	152	155	17	1,100
Held under lease	837	365	151	21	60	240	....	....
Timber land	1,017	536	....	....	300	85	....	96
Other land	1,344	429	1	....	165	294	....	455
Primary horsepower	15,031	9,172	2,296	962	1,339	630	15	817

---

[1] Includes operators as follows: Bluestone, 1; corundum and emery, 1; feldspar, 1; fuller's earth, 1; iron, 1; pyrite, 1; quartz, 1.

[2] Includes $169,297 which could not be distributed among the several industries.

[3] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $27,700; clerks and other salaried employees, $5,500; and taxes, $244.

[4] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 9; salaried officers of corporations, 6; and clerks and other salaried employees, 3.

MICHIGAN.

Summary.—The total value of the products of the mining enterprises in 1909 amounted to $67,714,479, which gives Michigan a rank of fourth among the states in the value of products reported. The principal industries were the mining of iron ore, copper ore, bituminous coal, and gypsum, and the quarrying of limestone. The value of the products of these five industries was $67,524,285, or 99.7 per cent of the total for all products. Of the total for the five industries, the iron ore mines contributed $32,168,133; the copper ore mines, $30,165,443; the coal mines, $3,175,102; gypsum mines, $1,220,321; and the limestone quarries, $795,286. Of the minor industries the production of grindstones was the most important.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 83 operators, 68 were corporations. These corporations reported 99.7 per cent of the total value of products and employed 99.3 per cent of all wage earners. In the copper industry all enterprises were conducted by corporations.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	83	40,397	$67,714,479	$815,837	100.0	100.0	100.0
Individual	11	151	127,218	11,565	13.3	0.4	0.2
Firm	4	113	69,013	17,253	4.8	0.3	0.1
Corporation	68	40,133	67,518,248	992,915	81.9	99.3	99.7
Bituminous coal	15	3,572	3,175,102	211,673	100.0	100.0	100.0
Individual[1]	4	105	71,391	17,848	26.7	2.9	2.2
Corporation	11	3,467	3,103,711	282,156	73.3	97.1	97.8

[1] Includes 1 firm and 1 cooperative association.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the total number of wage earners reported, 51 per cent were employed in the 10 enterprises employing over 1,000 wage earners each.

Table 2

	Incorporated.	Unincorporated.
Number of operators	68	15
Number of mines and quarries	154	19
Number of wells	21	...
Proprietors and firm members, total	...	118
Number performing manual labor	...	75
Salaried employees:		
Officers of corporations	144	...
Superintendents and managers	412	6
Clerks and other salaried employees	1,044	12
Wage earners, Dec. 15, 1909, or nearest representative day	40,133	264
Capital	$119,161,613	$170,374
Expenses of operation and development	51,650,175	169,663
Salaries—		
Officers of corporations	481,389	...
Superintendents and managers	766,728	7,442
Clerks and other salaried employees	912,652	5,311
Wages	27,550,028	110,880
Royalties and rent of mines	4,046,640	1,966
Taxes	1,947,983	773
Supplies and miscellaneous expenses	15,944,755	43,291
Value of products	67,518,248	196,231

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	124	100.0	40,397	100.0
No wage earners	1	0.8	...	...
Contract work	2	1.6	...	...
1 to 5	3	2.4	11	(1)
6 to 20	17	13.7	178	0.4
21 to 50	17	13.7	608	1.5
51 to 100	20	16.1	1,456	3.6
101 to 500	45	36.3	10,615	26.3
501 to 1,000	9	7.3	6,929	17.2
Over 1,000	10	8.1	20,600	51.0
Iron	44	100.0	16,125	100.0
6 to 50	5	11.4	150	0.9
51 to 100	7	15.9	526	3.3
101 to 500	25	56.8	6,081	37.7
Over 500	7	15.9	9,368	58.1
Copper	26	100.0	19,022	100.0
21 to 100	5	19.2	329	1.7
101 to 500	11	42.3	2,593	13.6
501 to 1,000	3	11.5	2,094	11.0
Over 1,000	7	26.9	14,006	73.6
Bituminous coal	17	100.0	3,572	100.0
6 to 20	3	17.6	25	0.7
21 to 100	7	41.2	371	10.4
Over 100	7	41.2	3,176	88.9

[1] Less than one-tenth of 1 per cent.

Persons employed in mining.—While iron ore mining was the leading industry in 1909, when measured by the value of products, copper ore mining ranks first when the number of persons employed is considered. Out of a total of 42,133 persons employed in the producing enterprises, 19,575, or 46.5 per cent, were employed in the copper industry, and 16,908 in the iron industry.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those prevailing in the enterprise.

The table shows a marked difference in the number of hours persons are employed in the three leading industries. In the iron ore mines, in 96.6 per cent of the enterprises weighted according to the number of wage earners, 10 hours were the prevailing hours of labor, while in copper mining 59.4 per cent and in bituminous coal mining 98.7 per cent of the enterprises were run on an 8-hour basis.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 121	100.0	100.0
8 hours and under	31	25.6	38.0
9 hours	11	9.1	14.0
10 hours	78	64.5	47.9
12 hours	1	0.8	0.1
Iron	46	100.0	100.0
8 hours and under	3	6.5	3.4
10 hours	43	93.5	96.6
Copper	25	100.0	100.0
8 hours and under	12	48.0	59.4
9 hours	8	32.0	29.3
10 hours	5	20.0	11.3
Bituminous coal	17	100.0	100.0
8 hours and under	16	94.1	98.7
9 hours	1	5.9	1.3

[1] Exclusive of petroleum and natural gas, and of 1 copper mine for which number of hours was not reported.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 273,861, of which 271,644 was developed by engines and water wheels owned by the enterprises using them, and 2,217 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Iron.	Copper.	Bituminous coal.	All other.
Primary power:					
Aggregate horsepower	**273,861**	**108,427**	**149,749**	**7,912**	**7,773**
Owned	271,644	108,262	148,565	7,912	6,905
Steam engines—					
Number	1,632	1,205	261	94	72
Horsepower	255,146	96,017	144,515	7,900	6,714
Gas or gasoline engines—					
Number	12	4	1	2	5
Horsepower	178	35	50	12	81
Water wheels—					
Number	[1] 26	24	[1] 1	....	1
Horsepower	16,320	12,210	4,000	....	110
Electric motors operated by purchased current—					
Number	69	13	30	....	26
Horsepower	2,217	165	1,184	....	868
Electric motors run by current generated by enterprise using:					
Number	281	149	72	47	13
Horsepower	16,780	7,341	6,908	2,162	369

[1] Includes 1 water motor of 4,000 horsepower.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the operation of copper smelters; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$29,344,947	$21,277,047	37.9
Supplies and materials	$11,898,749	$8,637,172	37.8
Royalties and rent of mines	$4,048,981	$2,311,479	75.2
Contract work	$472,605	$77,047	513.4
Value of products	$64,956,299	$48,022,962	35.3
Primary horsepower	271,891	184,278	47.5

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Michigan involves a duplication of $23,400,628, of which $22,045,406 represents the value of copper duplicated.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.							Nonproducing mines and quarries.[2]
		Total.	Iron.	Copper.	Bituminous coal.	Gypsum.	Limestone.	All other.[1]	
Number of operators	97	83	24	7	15	8	20	9	14
Number of mines, quarries, and wells	208	194	83	21	28	8	24	30	14
Capital	[3] $130,794,621	[3] $119,331,987	$57,158,347	$49,731,392	$6,865,156	$1,215,603	$2,799,282	$176,486	$11,462,634
Expenses of operation and development	**$52,775,492**	**$51,819,838**	**$22,459,011**	**$24,459,471**	**$2,885,802**	**$1,042,636**	**$685,326**	**$187,592**	**$955,654**
Services—									
Salaried officers of corporations, superintendents and managers	[4] $1,314,421	[4] $1,255,559	$612,929	$442,720	$87,445	$40,126	$29,287	$10,220	$58,862
Clerks and other salaried employees	[4] $953,599	[4] $917,963	$441,910	$325,549	$37,695	$85,214	$16,680	$1,698	$35,636
Wage earners	$28,147,326	$27,660,908	$10,668,069	$14,047,665	$2,267,272	$266,864	$332,859	$78,179	$486,418
Miscellaneous—									
Supplies	$9,972,231	$9,800,415	$3,452,519	$5,575,206	$295,251	$261,301	$142,441	$73,697	$171,816
Fuel and rent of power	$4,271,108	$4,193,347	$1,457,460	$2,544,253	$30,266	$70,909	$78,905	$11,554	$77,761
Royalties and rent of mines	$4,050,106	$4,048,606	$3,827,852	$147,372	$61,555	...	$8,141	$3,686	$1,500
Taxes	[4] $2,000,314	[4] $1,948,756	$949,945	$950,821	$14,439	$9,748	$10,879	$1,468	$51,558
Contract work	$511,673	$470,205	$436,148	$23,832	$2,203	...	$8,022	...	$41,468
Rent of offices and other sundry expenses	[4] $1,554,714	[4] $1,524,079	$612,179	$402,053	$189,676	$308,474	$58,112	$7,090	$30,635
Value of products	**$67,714,470**	**$67,714,479**	**$32,168,133**	**$30,165,443**	**$3,175,102**	**$1,220,321**	**$795,266**	**$190,194**	...
Persons engaged in industry	**[5] 42,970**	**[5] 42,133**	**16,908**	**19,575**	**3,782**	**733**	**934**	**178**	**837**
Proprietors and officials	[5] 719	[5] 680	308	156	154	16	33	9	39
Proprietors and firm members	118	118	...	...	104	...	11	3	...
Number performing manual labor.	75	75	...	...	70	...	4	1	...
Salaried officers of corporations	[5] 167	[5] 144	30	79	15	5	9	2	23
Superintendents and managers	434	418	278	77	35	11	13	4	16
Clerks and other salaried employees	[5] 1,113	[5] 1,056	475	397	56	82	23	4	57
Wage earners, Dec. 15, 1909, or nearest representative day	41,138	40,397	16,125	19,022	3,572	635	878	165	741
Above ground	14,427	14,063	4,665	7,409	318	628	878	165	364
Below ground	26,711	26,334	11,460	11,613	3,254	7	...	...	377
Men 16 years of age and over	41,060	40,319	16,104	18,970	3,572	635	873	165	741
Engineers, firemen, mechanics, etc.	5,080	4,918	1,705	2,831	209	20	135	18	162
Above ground	4,865	4,703	1,544	2,801	186	19	135	18	162
Below ground	215	215	161	30	23	1	...	...	...
Miners, miners' helpers, quarrymen, and stonecutters	21,338	21,121	7,853	9,700	2,796	132	516	124	217
Above ground	853	853	87	...	...	126	516	124	...
Below ground	20,485	20,268	7,766	9,700	2,796	6	...	...	217
All other employees	14,642	14,280	6,546	6,439	567	483	222	23	362
Above ground	8,644	8,442	3,026	4,556	132	483	222	23	202
Below ground	5,998	5,838	3,520	1,883	435	...	...	...	160
Boys under 16 years of age [6]	78	78	21	52	...	...	5	...	...
Number of wage earners employed on the 15th day of each month:									
January	39,006	38,419	14,351	19,166	3,703	734	389	76	587
February	38,995	38,409	14,456	19,075	3,644	688	485	61	586
March	39,487	38,870	14,557	19,307	3,611	689	567	139	617
April	38,980	38,352	14,128	19,220	3,305	793	663	243	628
May	39,395	38,721	14,476	19,274	3,112	745	868	246	674
June	39,571	38,778	14,656	19,027	3,213	759	879	244	793
July	40,185	39,422	15,020	19,342	3,254	721	834	251	763
August	40,415	39,617	15,145	19,271	3,320	715	925	241	798
September	40,664	39,886	15,494	19,206	3,382	676	898	230	778
October	40,935	40,155	15,803	19,150	3,386	751	863	202	780
November	40,384	39,606	15,734	18,728	3,414	727	843	160	778
December	40,526	39,791	16,052	18,732	3,496	625	739	147	735
Land controlled, acres	**469,807**	**452,602**	**247,656**	**160,153**	**25,661**	**690**	**6,062**	**12,380**	**17,305**
Owned	413,528	396,323	223,419	159,833	6,222	572	5,240	1,037	17,205
Held under lease	56,379	56,279	24,237	320	19,439	118	822	11,343	100
Mineral and oil land	137,716	122,468	17,205	67,369	23,135	397	2,342	12,020	15,248
Owned	93,393	78,245	4,464	67,369	3,696	279	1,520	917	15,148
Held under lease	44,323	44,223	12,741	...	19,439	118	822	11,103	100
Timber land	216,520	215,349	162,248	52,327	4	...	770	...	1,171
Other land	115,671	114,785	68,203	40,457	2,522	293	2,950	360	886
Primary horsepower	**278,684**	**273,861**	**108,427**	**149,749**	**7,912**	**3,228**	**3,155**	**1,390**	**4,823**

---

[1] Includes operators as follows: Clay, 1; grindstones, 2; peat, 1; petroleum and natural gas, 1; sandstone, 2; traprock, 2.

[2] Includes operators as follows: Copper, 12; iron, 2.

[3] Includes $1,385,721 which could not be distributed among the several industries. Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $32,832; clerks and other salaried employees, $9,217; and taxes, $11,456.

[5] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 23; salaried officers of corporations, 4; and clerks and other salaried employees, 19.

[6] In the iron mining industry 13 boys were employed below ground.

MINNESOTA.

Summary.—With a total value of products amounting to $58,664,852, Minnesota ranked sixth among the states in importance in mining in 1909. The mining of iron ore was the principal industry, with a value of products amounting to $57,076,135. This figure represents 97.3 per cent of the total value of products reported for the mines and quarries of the state and 53.4 per cent of the total value of products for the industry in the United States ($106,947,082). The two industries next in importance were granite and limestone quarrying, for which products valued at $672,904 and $641,344, respectively, were reported. The only other producing mining industries in the state were sandstone and traprock quarrying. In the combined statistics for these industries, which can not be shown separately without revealing individual operations of the one traprock producer, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 153 operators in all industries combined, 39 were corporations. These corporations reported 98.7 per cent of the total value of products and employed 95.3 per cent of all wage earners. In the production of iron ore all enterprises reported were conducted by corporations.

Table 1 INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	153	18,114	$58,664,852	$383,430	100.0	100.0	100.0
Individual[1]	77	363	249,153	3,236	50.3	2.0	0.4
Firm	37	481	515,666	13,937	24.2	2.7	0.9
Corporation	39	17,270	57,900,033	1,484,616	25.5	95.3	98.7

[1] Includes 1 estate.

Size of enterprises.—Table 3 classifies the producing enterprises according to the number of wage earners employed per enterprise or operating unit. For all industries, exclusive of those operated by contract work, the average number of wage earners per enterprise was 102, while for the enterprises engaged in the production of iron ore the average number employed was 360.

Table 2	Incorporated.	Unincorporated.
Number of operators	39	114
Number of mines and quarries	122	128
Proprietors and firm members, total		169
Number performing manual labor		99
Salaried employees:		
Officers of corporations	62	
Superintendents and managers	308	8
Clerks and other salaried employees	928	7
Wage earners, Dec. 15, 1909, or nearest representative day	17,270	844
Capital	$176,404,123	$546,246
Expenses of operation and development	38,057,149	517,031
Salaries—		
Officers of corporations	200,740	
Superintendents and managers	484,497	9,040
Clerks and other salaried employees	869,063	5,400
Wages	11,517,464	389,585
Royalties and rent of mines	10,717,887	14,072
Taxes	2,820,963	3,198
Supplies and miscellaneous expenses	11,446,535	95,736
Value of products	57,900,033	764,819

Table 3 INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	179	100.0	18,114	100.0
No wage earners	12	6.7		
Contract work	1	0.6		
1 to 5	58	32.4	133	0.7
6 to 20	41	22.9	408	2.3
21 to 50	18	10.1	613	3.4
51 to 100	17	9.5	1,173	6.5
Over 100	32	17.9	15,787	87.2
Iron	46	100.0	16,218	100.0
Contract work	1	2.2		
6 to 50	4	8.7	80	0.5
51 to 100	11	23.9	779	4.8
Over 100	30	65.2	15,359	94.7

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and one operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. For all industries combined, 94.5 per cent of the enterprises weighted according to the number of wage earners were operated on a 10-hour per day basis.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	167	100.0	100.0
8 hours and under	38	22.8	4.6
9 hours	13	7.8	0.9
10 hours	116	69.5	94.5
Iron	46	100.0	100.0
8 hours	2	4.3	1.9
10 hours	44	95.7	98.1

Engines and power.—As shown by Table 5, the aggregate horsepower employed by the producing enterprises was 151,834.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Iron.	Granite.	Limestone.	All other.
Primary power:					
Aggregate horsepower	**151,834**	**145,068**	**1,937**	**1,990**	**2,839**
Owned	150,296	145,068	1,719	1,700	1,809
Steam engines—					
Number	1,535	1,412	51	48	24
Horsepower	150,128	145,010	1,621	1,693	1,804
Gas or gasoline engines—					
Number	15	5	7	2	1
Horsepower	168	58	98	7	5
Electric motors operated by purchased current—					
Number	19	....	7	8	4
Horsepower	1,538	....	218	290	1,030
Electric motors run by current generated by enterprise using:					
Number	132	121	3	....	8
Horsepower	4,733	4,338	90	....	305

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions, and to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

In 1902, as in 1909, iron mining was the leading mining industry of the state and the percentages of increase shown in the table represent approximately the growth of this industry. The increase in the value of products of this industry during the period covered by the table amounted to $33,086,908, or 137.9 per cent.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$13,592,568	$6,887,017	97.4
Supplies and materials	$8,904,544	$2,839,332	213.6
Royalties and rent of mines	$10,732,309	$3,678,964	191.7
Contract work	$2,157,108	$339,244	535.9
Value of products	$58,975,781	$25,620,677	130.2
Primary horsepower	162,153	28,492	434.0

Duplication between manufactures and mining.—In the operation of granite, limestone, and sandstone quarries, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Minnesota involves a duplication of $852,077. Of this amount, $494,622 represents the value of the granite, $184,399 the value of the limestone, and $173,056 the value of the sandstone.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES. Total.	Iron.	Granite.	Limestone.	All other.[1]	Nonproducing mines and quarries.[2]
Number of operators	163	153	20	35	90	8	10
Number of mines and quarries	260	250	101	46	95	8	10
Capital	[3] $179,252,951	[3] $176,950,369	$174,863,024	$673,650	$683,306	$730,389	$2,302,582
Expenses of operation and development	$39,209,773	$38,574,180	$37,295,373	$487,853	$524,855	$286,099	$635,593
Services—							
Salaried officers of corporations, superintendents, and managers	[4] $705,515	[4] $694,277	$490,187	$16,275	$36,900	$31,915	$11,238
Clerks and other salaried employees	[4] $887,185	[4] $874,463	$602,087	$2,950	$12,620	$6,500	$12,722
Wage earners	$12,160,563	$11,907,049	$11,068,652	$327,024	$339,563	$171,810	$253,514
Miscellaneous—							
Supplies	$6,893,500	$6,736,806	$6,597,440	$66,155	$57,266	$15,945	$156,694
Fuel and rent of power	$2,091,706	$2,024,606	$1,951,421	$30,343	$17,325	$25,517	$67,100
Royalties and rent of mines	$10,765,709	$10,731,959	$10,686,407	$2,854	$36,320	$6,378	$33,750
Taxes	[4] $2,851,143	[4] $2,824,161	$2,653,794	$2,006	$6,922	$4,967	$26,982
Contract work	$2,192,008	$2,157,108	$2,157,075	$33	...	...	$34,900
Rent of offices and other sundry expenses	[4] $662,444	[4] $623,751	$1,088,310	$20,213	$17,939	$23,067	$38,693
Value of products	$58,664,852	$58,664,852	$57,076,135	$672,904	$641,344	$274,469	...
Persons engaged in industry	[5] 20,162	[5] 19,596	17,238	627	1,019	512	566
Proprietors and officials	[5] 562	[5] 547	317	75	120	22	16
Proprietors and firm members	171	169	...	61	102	6	2
Number performing manual labor	99	99	...	32	67	...	...
Salaried officers of corporations	[5] 65	[5] 62	31	6	6	6	3
Superintendents and managers	326	316	286	8	12	10	10
Clerks and other salaried employees	[5] 955	[5] 935	703	7	14	24	20
Wage earners, Dec. 15, 1909, or nearest representative day	18,645	18,114	16,218	545	885	466	531
Above ground	11,559	11,176	9,280	545	885	466	383
Below ground	7,086	6,938	6,938	...	...	...	148
Men 16 years of age and over	18,641	18,110	16,214	545	885	466	531
Engineers, firemen, mechanics, etc	2,939	2,797	2,660	49	43	45	142
Above ground	2,884	2,747	2,610	49	43	45	137
Below ground	55	50	50	...	...	...	5
Miners, miners' helpers, quarrymen, and stonecutters	7,308	7,120	5,625	415	666	414	188
Above ground	1,846	1,784	289	415	666	414	62
Below ground	5,462	5,336	5,336	...	...	...	126
All other employees	8,394	8,193	7,929	81	176	7	201
Above ground	6,825	6,641	6,377	81	176	7	184
Below ground	1,569	1,552	1,552	...	...	...	17
Boys under 16 years of age (all above ground)	4	4	4	...	...	...	...
Number of wage earners employed on the 15th day of each month:							
January	13,739	13,556	12,679	484	237	156	183
February	14,192	13,987	13,046	496	288	157	205
March	14,500	14,280	13,065	571	406	238	220
April	14,958	14,733	13,109	625	664	335	225
May	17,241	17,020	15,199	653	698	470	221
June	17,778	17,532	15,529	681	820	502	246
July	18,219	17,956	15,947	661	849	499	263
August	18,334	18,034	16,084	629	834	487	300
September	18,567	18,221	16,324	570	867	460	346
October	18,952	18,595	16,740	571	833	451	357
November	18,601	18,211	16,465	550	808	388	390
December	17,444	16,905	15,550	452	565	338	539
Land controlled, acres	339,541	337,792	332,233	3,344	1,687	528	1,749
Owned	206,647	206,287	201,386	3,021	1,408	472	360
Held under lease	132,894	131,505	130,847	323	279	56	1,389
Mineral land	20,062	18,433	14,336	2,477	1,133	487	1,629
Owned	6,314	5,954	2,510	2,154	858	432	360
Held under lease	13,748	12,479	11,826	323	275	55	1,269
Timber land	86,611	86,611	86,302	300	9	...	...
Other land	232,868	232,748	231,595	567	545	41	120
Primary horsepower	153,593	151,834	145,068	1,937	1,990	2,839	1,759

---

[1] Includes operators as follows: Sandstone, 7; traprock, 1.

[2] Includes operators as follows: Copper, 1; iron, 9.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries, and properly distributed in the total for all industries, are as follows: Salaried officers of corporations, superintendents, and managers, $119,000; clerks and other salaried employees, $250,306; and taxes, $156,472.

[5] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 200; salaried officers of corporations, 13; and clerks and other salaried employees, 187

MISSOURI.

Summary.—In the lead and zinc industry the statistics include all operations connected with mining the crude ore and the treatment to which the ore is subjected at the mine before marketing, including the operation of hand jigs, mills, and smelters. Custom mills, whether connected with mines or not, have also been included.

The total number of operators of mining enterprises reported was 1,050, of which 1,021 reported production and 29 reported development work only.

The gross value of the products was $31,667,525. Deducting from this amount $1,471,553, the value of lead and zinc ore and concentrate marketed by some operators and used as material by others, leaves $30,195,972 as the net value of the products. The principal industry was the production of lead and zinc, which reported a gross value of products of $22,565,528, of which $47,529 represented the value of the crude ore sold as such, $18,015,313 the value of the output of concentrating mills, $4,444,500 the value of the output of smelters connected with mines, $49,157 the tolls received by the custom mills, and $9,029 the value of other products. The only other industries in Missouri with products valued at over a million dollars in 1909 were bituminous coal mining and limestone quarrying. These two industries contributed products valued, respectively, at $5,881,034 and $2,027,902.

In the petroleum and natural gas industry and for the industries included in column "All other" of Table 7 the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 1,021 operators, 344, or 33.7 per cent, were corporations. These corporations reported 83.7 per cent of the total value of products and employed 79.9 per cent of all wage earners.

Table 1	PRODUCING ENTERPRISES: 1909						
INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**1,021**	**29,676**	**$31,667,525**	**$31,016**	**100.0**	**100.0**	**100.0**
Individual	254	2,336	1,575,482	6,203	24.9	7.9	5.0
Firm	418	3,524	3,508,342	8,393	40.9	11.9	11.1
Corporation	344	23,721	26,512,369	77,071	33.7	79.9	83.7
Other	5	95	71,332	14,266	0.5	0.3	0.2
Lead and zinc	**617**	**16,319**	**22,565,526**	**36,573**	**100.0**	**100.0**	**100.0**
Individual	56	557	503,463	8,990	9.1	3.4	2.2
Firm	335	2,216	2,741,167	8,183	54.3	13.6	12.1
Corporation	226	13,546	19,320,898	85,491	36.6	83.0	85.6
Bituminous coal	**173**	**9,526**	**5,681,034**	**33,994**	**100.0**	**100.0**	**100.0**
Individual	73	938	463,874	6,354	42.2	9.8	7.9
Firm	42	710	415,248	9,887	24.3	7.5	7.1
Corporation	55	7,793	4,931,820	89,669	31.8	81.8	83.9
Other	3	85	70,092	23,364	1.7	0.9	1.2
Limestone	**144**	**2,437**	**2,027,902**	**14,083**	**100.0**	**100.0**	**100.0**
Individual	82	585	365,615	4,459	56.9	24.0	18.0
Firm	23	319	200,983	8,738	16.0	13.1	9.9
Corporation	39	1,533	1,461,304	37,469	27.1	62.9	72.1

Table 2	Incorporated.	Unincorporated.
Number of operators	344	677
Number of mines and quarries	464	760
Number of wells	11	28
Proprietors and firm members, total	...	1,783
Number performing manual labor	...	1,063
Salaried employees:		
Officers of corporations	174	...
Superintendents and managers	392	101
Clerks and other salaried employees	309	27
Wage earners, Dec. 15, 1909, or nearest representative day	23,721	5,955
Capital	$57,427,848	$3,121,233
Expenses of operation and development	23,456,142	4,058,959
Salaries—		
Officers of corporations	432,245	...
Superintendents and managers	488,791	72,154
Clerks and other salaried employees	266,051	15,679
Wages	12,242,480	2,151,090
Royalties and rent of mines	1,251,883	702,209
Taxes	148,128	9,958
Supplies and miscellaneous expenses	7,202,639	1,060,241
Cost of ore and concentrate purchased	1,423,925	47,628
Value of products	26,512,369	5,155,156

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Out of 29,676 wage earners reported by all enterprises, 13,903, or nearly one-half, were employed in the 35 enterprises employing over 100 wage earners each. In the bituminous coal mining industry over three-fifths of the wage earners were employed by the 23 enterprises reporting over 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**1,039**	**100.0**	**29,676**	**100.0**
No wage earners	97	9.3		
Contract work and part-time employees	23	2.2		
1 to 5	273	26.3	769	2.6
6 to 20	335	32.2	3,905	13.2
21 to 50	214	20.6	6,791	22.9
51 to 100	62	6.0	4,308	14.5
101 to 500	27	2.6	6,065	20.4
Over 500	8	0.8	7,838	26.4
Lead and zinc	**617**	**100.0**	**16,319**	**100.0**
No wage earners	76	12.3		
Contract work	8	1.3		
1 to 5	180	29.2	495	3.0
6 to 20	182	29.5	2,192	13.4
21 to 50	128	20.7	4,116	25.2
51 to 100	33	5.3	2,287	14.0
101 to 500	4	0.6	714	4.4
Over 500	6	1.0	6,515	39.9
Bituminous coal	**190**	**100.0**	**9,528**	**100.0**
No wage earners	1	0.5		
Contract work	5	2.6		
1 to 5	20	10.5	81	0.9
6 to 20	85	44.7	971	10.2
21 to 50	42	22.1	1,279	13.4
51 to 100	14	7.4	1,011	10.6
Over 100	23	12.1	6,184	64.9
Limestone	**144**	**100.0**	**2,437**	**100.0**
No wage earners	10	6.9		
1 to 5	47	32.6	116	4.8
6 to 20	44	30.6	435	17.8
21 to 50	30	20.8	959	39.4
Over 50	13	9.0	927	38.0

Prevailing hours of labor.—In Table 4 the producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

In the lead and zinc mines and the coal mines, in which 87.1 per cent of all wage earners were employed, over 90 per cent of the enterprises weighted according to the number of wage earners were operated on an 8-hour basis. In the limestone quarries, which employed less than 10 per cent of the wage earners, a day of 10 hours generally prevailed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] **917**	**100.0**	**100.0**
8 hours and under	633	69.0	84.7
9 hours	77	8.4	4.9
10 hours	198	21.6	10.3
12 hours	9	1.0	0.1
Lead and zinc	**531**	**100.0**	**100.0**
8 hours and under	459	86.4	94.2
9 hours	29	5.5	4.1
10 hours	35	6.6	1.6
12 hours	8	1.5	0.1
Bituminous coal	**184**	**100.0**	**100.0**
8 hours	164	89.1	97.8
9 hours	17	9.2	1.8
10 hours	2	1.1	0.2
12 hours	1	0.5	0.1
Limestone	**134**	**100.0**	**100.0**
8 hours	4	3.0	0.5
9 hours	19	14.2	11.2
10 hours	111	82.8	88.3

[1] Exclusive of petroleum and natural gas, and 5 lead and zinc mines for which number of hours was not reported.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in all producing enterprises was 109,672, of which 106,349 was developed by engines and water wheels owned by the enterprises using them and 3,323 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Lead and zinc.	Bituminous coal.	Limestone.	All other.
Primary power:					
Aggregate horsepower	**109,672**	**86,189**	**11,898**	**6,691**	**4,894**
Owned	106,349	83,396	11,763	6,491	4,699
Steam engines—					
Number	2,049	1,607	238	145	59
Horsepower	95,132	72,902	11,619	6,005	4,606
Gas or gasoline engines—					
Number	187	136	30	14	7
Horsepower	11,108	10,425	144	486	53
Water wheels—					
Number	5	3			2
Horsepower	109	69			40
Electric motors operated by purchased current—					
Number	69	48	6	9	6
Horsepower	3,323	2,793	135	200	195
Electric motors run by current generated by enterprise using:					
Number	356	247	78	20	11
Horsepower	11,019	8,424	2,042	243	310

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Missouri involves a duplication of $5,106,404.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines and statistics for the operations of lead and zinc smelters; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$15,667,995	$9,989,027	56.9
Supplies and materials	$7,071,069	$2,856,858	147.5
Royalties and rent of mines	$1,955,492	$1,398,827	39.8
Contract work	[2] $135,384	$172,514	—21.5
Value of products	$30,378,747	$20,279,481	49.8
Primary horsepower	109,971	46,384	137.1

---

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry which are included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.											Nonproducing mines and quarries.[2]
		Total.	Lead and zinc.	Bituminous coal.	Limestone.	Granite.	Sandstone.	Clay (sold as such).	Iron.	Barytes.	Petroleum and natural gas.	All other.[1]	
Number of operators	1,050	1,021	617	173	144	7	14	17	16	16	12	5	29
Number of mines, quarries, and wells	1,294	1,263	722	220	168	7	15	23	33	27	39	9	31
Capital[3]	$61,843,479	$60,549,081	$46,559,300	$5,410,407	$1,975,200	$693,837	$53,215	$324,552	$3,167,225	$168,705	$65,250	$2,131,390	$1,294,398
Expenses of operation and development	$27,744,999	$27,515,101	$19,125,625	$5,715,727	$1,653,170	$124,800	$25,516	$164,523	$150,836	$56,118	$14,786	$483,700	$229,898
Services—													
Salaried officers of corporations, superintendents, and managers	$999,550	$993,190	$679,947	$148,745	$116,222	$13,280	$144	$8,427	$6,325	....	$600	$19,500	$6,360
Clerks and other salaried employees	$282,030	$281,730	$152,759	$60,485	$55,567	$2,631	$360	$3,148	$3,920	$400	$120	$2,340	$300
Wage earners	$14,436,037	$14,393,570	$8,108,598	$4,695,972	$985,465	$83,500	$15,805	$103,157	$99,659	$45,957	....	$255,457	$42,467
Miscellaneous—													
Supplies	[4] $6,227,315	[4] $6,201,895	[4] $5,518,634	$321,380	$260,215	$8,317	$3,772	$8,805	$15,984	$838	$5,843	$58,107	$25,420
Fuel and rent of power	$2,230,417	$2,220,657	$1,880,216	$75,688	$119,237	$6,286	$1,292	$9,705	$9,207	$60	$130	$118,836	$9,760
Royalties and rent of mines	$1,954,723	$1,954,092	$1,737,874	$160,182	$25,345	$4,000	$1,302	$7,081	$12,033	$3,157	$456	$2,662	$631
Taxes	$159,321	$158,086	$129,138	$6,911	$10,900	$1,237	$226	$2,874	$810	$1,261	$52	$4,677	$1,235
Contract work	$297,380	$162,084	$114,723	$23,903	$7,034	....	$1,609	$3,300	$1,099	$3,576	$6,840	....	$135,286
Rent of offices and other sundry expenses	$1,158,226	$1,149,797	$804,036	$222,461	$73,185	$5,549	$1,006	$18,026	$1,799	$869	$745	$22,121	$8,429
Value of products	$31,667,525	$31,667,525	$22,565,528	$5,881,034	$2,027,902	$155,717	$29,272	$251,594	$203,849	$76,661	$11,455	$464,513	....
Persons engaged in industry	32,726	32,462	18,191	8,991	2,731	204	81	293	358	148	14	451	264
Proprietors and officials	2,531	2,450	1,695	381	241	14	17	27	25	19	13	18	81
Proprietors and firm members	1,854	1,783	1,317	244	135	4	16	16	16	19	12	4	71
Number performing manual labor	1,078	1,063	753	208	65	....	12	3	9	11	2	....	15
Salaried officers of corporations	174	174	79	32	47	4	....	5	2	....	....	5	....
Superintendents and managers	503	493	299	105	59	6	1	6	7	....	1	9	10
Clerks and other salaried employees	338	336	177	84	53	4	1	5	6	1	1	4	2
Wage earners, Dec. 15, 1909, or nearest representative day	29,857	29,676	16,319	9,526	2,437	186	63	261	327	128	....	429	181
Above ground	10,649	10,528	5,967	991	2,437	186	63	212	284	41	....	347	121
Below ground	19,208	19,148	10,352	8,535	....	....	....	49	43	87	....	82	60
Men 16 years of age and over	29,789	29,608	16,292	9,507	2,435	184	63	246	324	128	....	429	181
Engineers, firemen, mechanics, etc	3,551	3,514	2,898	356	165	21	7	7	15	....	....	45	37
Above ground	3,401	3,366	2,760	347	165	21	7	6	15	....	....	45	35
Below ground	150	148	138	9	....	....	....	1	....	....	....	....	2
Miners, miners' helpers, quarrymen, and stonecutters	18,892	18,781	9,278	7,015	1,669	149	47	125	281	110	....	107	111
Above ground	2,393	2,340	107	....	1,669	149	47	82	238	23	....	25	53
Below ground	16,499	16,441	9,171	7,015	....	....	....	43	43	87	....	82	58
All other employees	7,346	7,313	4,116	2,136	601	14	9	114	28	18	....	277	33
Above ground	4,811	4,778	3,078	644	601	14	9	109	28	18	....	277	33
Below ground	2,535	2,535	1,038	1,492	....	....	....	5	....	....	....	....	....
Boys under 16 years of age[5]	68	68	27	19	2	2	....	15	3	....	....	....	....
Number of wage earners employed on the 15th day of each month:													
January	22,560	22,514	11,674	8,689	1,186	67	17	170	207	79	....	425	46
February	22,585	22,530	12,012	8,392	1,104	86	33	179	220	78	....	426	55
March	22,732	22,671	12,060	7,910	1,586	123	57	164	245	99	....	427	61
April	21,228	21,170	12,233	5,795	1,991	135	54	182	260	94	....	426	58
May	21,394	21,318	12,450	5,616	2,133	137	46	186	235	89	....	426	76
June	22,763	22,682	13,095	6,231	2,140	167	38	197	297	93	....	424	81
July	22,932	22,793	12,998	6,511	2,102	163	38	231	228	94	....	428	139
August	23,405	23,245	12,768	7,057	2,228	173	44	228	208	113	....	426	160
September	24,686	24,577	13,243	7,955	2,156	175	48	219	244	111	....	426	109
October	25,403	25,272	13,318	8,680	2,127	167	52	202	198	101	....	427	131
November	26,017	25,903	13,801	8,917	2,080	145	34	220	173	107	....	426	114
December	26,481	26,367	14,000	9,370	1,893	72	20	229	243	116	....	424	114
Land controlled, acres	370,423	339,677	106,001	119,822	2,281	686	511	1,996	91,600	8,622	6,434	1,714	30,746
Owned	292,014	270,618	95,688	74,519	1,598	340	319	1,081	90,257	4,834	524	1,458	21,396
Held under lease	78,409	69,059	10,313	45,303	683	356	192	915	1,343	3,788	5,910	256	9,350
Mineral and oil land	265,158	235,112	85,489	116,108	1,907	346	373	1,766	12,353	8,622	6,434	1,714	30,046
Owned	188,120	166,724	75,296	70,805	1,268	340	181	851	11,167	4,834	524	1,458	21,396
Held under lease	77,038	68,388	10,193	45,303	639	6	192	915	1,186	3,788	5,910	256	8,650
Timber land	12,294	11,594	10,000	160	7	350	....	120	957	....	....	....	700
Other land	92,971	92,971	16,512	3,554	367	....	138	110	78,290	....	....	....	....
Primary horsepower	111,007	109,672	86,189	11,898	6,691	867	248	329	403	12	220	2,815	1,335

---

[1] Includes operators as follows: Nickel and cobalt, 1; tripoli, 4.

[2] Includes operators as follows: Bituminous coal, 1; clay, 1; iron, 3; lead and zinc, 24.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] Includes $1,471,553, cost of purchased ore and concentrate.

[5] In the bituminous coal industry 19 boys were employed below ground and in the lead and zinc industry, 5.

MONTANA.

Summary.—The gross value of the products of all mines and quarries in Montana in 1909 was $54,991,961. Deducting from this amount, $6,559,820, the value of the copper ore marketed by some operators and used as material by others, leaves $48,432,141 as the net value of the products. Of this amount, the copper industry, including the copper ore sold as such and the copper products of the mills operated in connection with the mines, contributed $39,400,697, or 81.4 per cent. In the operations of "All other" industries, which includes the production of clay, granite, gypsum, lead and zinc, and precious stones, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**373**	**20,503**	**$54,991,961**	**$147,432**	**100.0**	**100.0**	**100.0**
Individual	135	594	761,942	5,644	36.2	2.9	1.4
Firm	144	553	626,832	4,353	38.6	2.7	1.1
Corporation	94	19,356	53,603,187	570,247	25.2	94.4	97.5
Copper	**35**	**13,697**	**45,960,517**	**1,313,158**	**100.0**	**100.0**	**100.0**
Individual	12	84	136,870	11,406	34.3	0.6	0.3
Firm	10	14	63,548	6,355	28.6	0.1	0.1
Corporation	13	13,599	45,760,099	3,520,008	37.1	99.3	99.6
Gold and silver, deep mines	**192**	**1,584**	**3,002,328**	**15,637**	**100.0**	**100.0**	**100.0**
Individual	59	235	198,984	3,373	30.7	14.8	6.6
Firm	93	253	327,371	3,520	48.4	16.0	10.9
Corporation	40	1,096	2,475,973	61,899	20.8	69.2	82.5
Bituminous coal	**48**	**4,612**	**5,117,444**	**106,613**	**100.0**	**100.0**	**100.0**
Individual	12	122	194,400	16,200	25.0	2.6	3.8
Firm	12	168	144,290	12,024	25.0	3.6	2.8
Corporation	24	4,322	4,778,754	199,115	50.0	93.7	93.4

Out of a total of 373 operators, 94, or 25.2 per cent, were corporations. These corporations reported 97.5 per cent of the total value of products and employed 94.4 per cent of all wage earners. In the copper mining industry the 13 incorporated companies reported 99.6 per cent of the total value of products.

Table 2

	Incorporated.	Unincorporated.
Number of operators	103	270
Number of mines and quarries	195	348
Proprietors and firm members, total		504
Number performing manual labor		355
Salaried employees:		
Officers of corporations	51	
Superintendents and managers	195	19
Clerks and other salaried employees	610	9
Wage earners, Dec. 15, 1909, or nearest representative day	19,356	1,147
Capital	$140,914,107	$4,221,403
Expenses of operation and development	45,250,978	1,269,567
Salaries—		
Officers of corporations	124,225	
Superintendents and managers	571,550	22,821
Clerks and other salaried employees	684,646	9,831
Wages	20,561,848	799,558
Royalties and rent of mines	1,704,457	118,418
Taxes	447,468	6,918
Supplies and miscellaneous expenses	14,596,964	313,021
Cost of ore purchased	6,559,820	
Value of products	53,603,187	1,388,774

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**382**	**100.0**	**20,503**	**100.0**
No wage earners	95	24.9		
Contract work	8	2.1		
1 to 5	154	40.3	373	1.8
6 to 20	60	15.7	682	3.3
21 to 50	23	6.0	780	3.8
51 to 100	15	3.9	1,045	5.1
101 to 500	17	4.5	4,046	19.7
501 to 1,000	4	1.0	2,693	13.1
Over 1,000	6	1.6	10,884	53.1
Copper	**41**	**100.0**	**13,697**	**100.0**
No wage earners	2	4.9		
Contract work	1	2.4		
1 to 20	20	48.8	113	0.8
21 to 100	6	14.6	339	2.5
101 to 500	4	9.8	1,441	10.5
501 to 1,000	3	7.3	2,067	15.1
Over 1,000	5	12.2	9,737	71.1
Gold and silver, deep mines	**192**	**100.0**	**1,584**	**100.0**
No wage earners	61	31.8		
Contract work	4	2.1		
1 to 5	82	42.7	181	11.4
6 to 20	28	14.6	298	18.8
21 to 50	9	4.7	283	17.9
51 to 100	5	2.6	405	25.6
Over 100	3	1.6	417	26.3
Bituminous coal	**51**	**100.0**	**4,612**	**100.0**
1 to 5	15	29.4	43	0.9
6 to 20	15	29.4	171	3.7
21 to 50	3	5.9	104	2.3
51 to 100	6	11.8	333	7.2
Over 100	12	23.5	3,961	85.9

The greatest degree of concentration is noted in the copper industry, where 9,737, or 71.1 per cent, of the 13,697 wage earners employed in this industry were reported by the five enterprises employing over 1,000 wage earners each. In gold and silver mining, 61 enterprises were conducted by the proprietors without the aid of hired labor. The average number employed per enterprise in this industry was only 8, while in the copper industry the average was 342.

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

The eight-hour day generally prevailed in all mining industries in the state. For all industries combined 90.6 per cent of the enterprises, employing 99 per cent of the wage earners, reported the eight-hour day. In the copper and coal industries all enterprises and in gold and silver, deep mines, all but three, reported a day of eight hours.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 276	100.0	100.0
8 hours and under	252	90.6	99.0
9 hours	7	2.5	0.2
10 hours	19	6.8	0.8

[1] Exclusive of 1 limestone quarry for which number of hours was not reported.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in all producing enterprises was 174,389, of which 148,242 horsepower, or 85 per cent, was employed in the production of copper.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Copper.	Gold and silver, deep mines.	Bituminous coal.	All other.
Primary power: Aggregate horsepower	174,389	148,242	6,712	16,173	3,262
Owned	134,812	111,471	5,840	16,069	1,432
Steam engines— Number	311	118	63	109	21
Steam engines— Horsepower	120,009	98,727	3,906	16,066	1,310
Gas or gasoline engines— Number	16	3	11	1	1
Gas or gasoline engines— Horsepower	190	44	141	3	2
Water wheels— Number	[1] 29	10	[1] 13	....	6
Water wheels— Horsepower	14,613	12,700	1,793	....	120
Electric motors operated by purchased current— Number	517	444	27	6	40
Electric motors operated by purchased current— Horsepower	39,577	36,771	872	104	1,830
Electric motors run by current generated by enterprise using: Number	126	2	28	86	10
Horsepower	4,376	23	1,052	2,801	500

[1] Includes 1 water motor of 20 horsepower.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines and statistics for the operation of copper smelters, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$18,547,991	$12,724,627	45.8
Supplies and materials	$7,951,621	$5,007,102	58.8
Royalties and rent of mines	$292,471	$231,774	26.2
Contract work	[1] $292,902	$64,636	353.2
Value of products	$36,892,896	$28,265,085	30.5
Primary horsepower	118,518	61,862	91.6

[1] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Montana involves a duplication of $41,989,544.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.								Nonproducing mines, quarries, and wells.[2]
		Total.	Copper.	Gold and silver, deep mines.	Placer gold.	Bituminous coal.	Limestone.	Sandstone.	All other.[1]	
Number of operators	638	373	35	192	73	48	8	11	6	265
Number of mines, quarries, and wells	1,299	543	86	237	118	65	12	12	13	756
Capital [3]	$165,776,919	$145,135,510	$91,195,350	$30,420,376	$8,340,877	$8,546,343	$349,000	$80,550	$6,203,014	$20,641,409
Expenses of operation and development	**$48,026,949**	**$46,520,545**	**$38,073,609**	**$2,996,123**	**$403,284**	**$4,584,974**	**$114,811**	**$73,871**	**$274,173**	**$1,505,804**
Services—										
Salaried officers of corporations, superintendents, and managers	$821,369	$718,596	$468,276	$101,037	$17,288	$117,661	...	$360	$13,975	102,773
Clerks and other salaried employees	$701,846	$694,477	$542,448	$37,715	$7,975	$97,493	$1,920	$1,800	$5,126	$7,369
Wage earners	$22,166,735	$21,361,406	$15,804,631	$1,653,826	$152,145	$3,479,894	$88,451	$53,507	$128,892	$805,329
Miscellaneous—										
Supplies	$10,195,775	$9,837,503	$8,535,133	$617,010	$53,495	$539,837	$18,562	$8,130	$65,346	$358,272
Cost of ore purchased	$6,559,820	$6,559,820	$6,559,820	...	...	...	...	...	...	...
Fuel and rent of power	$3,674,085	$3,628,050	$3,199,989	$209,012	$65,172	$125,967	$1,994	$3,500	$22,416	$46,035
Royalties and rent of mines	$1,823,391	$1,822,875	$1,591,782	$132,249	$514	$96,151	...	$460	$1,719	$516
Taxes	$456,191	$453,386	$395,677	$17,309	$4,988	$33,718	$423	$514	$857	$2,805
Contract work	$503,731	$394,499	$264,887	$109,981	$18,976	$415	...	$240	...	$109,232
Rent of offices and other sundry expenses	$1,123,406	$1,049,933	$711,067	$117,984	$82,731	$93,538	$3,471	$5,300	$35,842	$73,473
Value of products	**$54,991,961**	**$54,991,961**	**$45,960,617**	**$3,002,328**	**$502,653**	**$5,117,444**	**$164,064**	**$74,593**	**$180,362**	...
Persons engaged in mining industry	**23,271**	**21,791**	**14,251**	**1,969**	**367**	**4,793**	**136**	**98**	**177**	**1,480**
Proprietors and officials	1,126	769	164	360	114	93	10	14	14	357
Proprietors and firm members	776	504	30	303	102	41	10	13	5	272
Number performing manual labor	532	355	15	224	77	28	3	5	3	177
Salaried officers of corporations	80	51	15	14	1	14	...	...	7	29
Superintendents and managers	270	214	119	43	11	38	...	1	2	56
Clerks and other salaried employees	531	519	390	25	6	88	2	1	7	12
Wage earners, Dec. 15, 1909, or nearest representative day	21,614	20,503	13,697	1,584	247	4,612	124	83	156	1,111
Above ground	7,269	6,972	4,913	564	240	938	124	83	110	297
Below ground	14,345	13,531	8,784	1,020	7	3,674	...	...	46	814
Men 16 years of age and over	21,608	20,503	13,697	1,584	247	4,612	124	83	156	1,105
Engineers, firemen, mechanics, etc.	2,040	1,890	1,160	192	32	463	13	9	21	160
Above ground	1,805	1,666	1,082	168	32	341	13	9	21	139
Below ground	235	224	78	24	...	122	...	...	...	11
Miners, miners' helpers, quarrymen, and stonecutters	14,199	13,325	8,780	1,067	140	3,096	98	64	80	874
Above ground	702	624	183	112	133	...	98	64	34	78
Below ground	13,497	12,701	8,597	955	7	3,096	...	...	46	796
All other employees	5,369	5,288	3,757	325	75	1,053	13	10	55	81
Above ground	4,756	4,682	3,648	284	75	597	13	10	55	74
Below ground	613	606	109	41	...	456	...	...	...	7
Boys under 16 years of age (all above ground)	6	...	...	...	...	...	...	...	...	6
Number of wage earners employed on the 15th of each month:										
January	18,770	18,320	12,911	1,006	72	4,095	78	39	119	450
February	18,849	18,292	13,000	1,082	67	3,905	81	46	111	557
March	19,222	18,614	13,159	1,139	94	3,940	104	53	126	608
April	19,290	18,587	13,214	1,140	133	3,828	88	39	145	703
May	19,529	18,819	13,170	1,232	176	3,950	102	39	150	710
June	19,243	18,520	12,921	1,279	168	3,842	103	52	155	723
July	19,582	18,843	13,236	1,353	180	3,741	121	50	162	739
August	19,406	18,588	12,898	1,404	149	3,828	106	51	152	818
September	20,006	19,157	13,141	1,457	131	4,088	117	68	155	849
October	20,946	20,069	13,768	1,540	118	4,261	166	68	148	877
November	21,207	20,349	13,921	1,445	122	4,498	152	66	145	858
December	18,793	17,999	11,691	1,287	122	4,594	115	46	144	794
Land controlled, acres	**157,940**	**119,642**	**34,628**	**14,015**	**13,490**	**64,335**	**1,993**	**504**	**677**	**38,298**
Owned	138,081	104,494	34,362	10,216	12,844	44,098	1,973	334	667	33,587
Held under lease	19,859	15,148	266	3,799	646	10,237	20	170	10	4,711
Mineral and oil land	120,899	85,016	4,842	14,015	13,300	49,825	1,993	364	677	35,883
Owned	101,040	69,868	4,576	10,216	12,654	39,588	1,973	194	667	31,172
Held under lease	19,859	15,148	266	3,799	646	10,237	20	170	10	4,711
Timber land	5,680	3,960	2,080	...	...	1,880	...	...	...	1,720
Other land	31,361	30,666	27,706	...	190	2,630	...	140	...	695
Primary horsepower	**179,452**	**174,389**	**148,242**	**6,712**	**2,260**	**16,173**	**461**	**77**	**464**	**5,063**

---

[1] Includes operators, as follows: Clay, 1; granite, 2; gypsum, 1; lead and zinc, 1; precious stones, 1.

[2] Includes operators, as follows: Bituminous coal, 1; gold and silver, deep mines, 250; graphite, 1; limestone, 1; petroleum and natural gas, 1; placer gold, 11.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

NEBRASKA.

Summary.—Only 18 operators of mining enterprises were reported from Nebraska in 1909. Of these, 16 were engaged in the production of limestone and 2 in the production of pumice. The total value of the products was $322,517, and the number of wage earners employed on December 15, 1909, or the nearest representative day, was 491. The mineral land connected with the enterprises was reported as 1,038 acres, of which 524 was owned and 514 held under lease.

Table 2 presents detailed statistics for the two industries combined.

Comparison of mining industries: 1902–1909.—Table 1 presents such data for 1909 and 1902 as are comparable for the two years.

Table 1	1909	1902	Per cent of increase.
Wages and salaries	$186,582	$103,936	79.5
Supplies and materials	$57,493	$11,173	414.6
Royalties and rent of mines	$1,551	$823	88.4
Contract work	[1] $5,494		
Value of products	$322,517	$148,391	117.3
Primary horsepower	815	296	175.3

[1] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 1.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 2	All industries.[1]
Number of operators	18
Number of mines and quarries	20
Capital	$222,428
Expenses of operation and development	$260,049
Services—	
Salaried officers of corporations, superintendents, and managers	$12,900
Clerks and other salaried employees	$3,745
Wage earners	$169,937
Miscellaneous—	
Supplies	$35,474
Fuel and rent of power	$22,019
Royalties and rent of mines	$1,551
Taxes	$414
Contract work	$5,593
Rent of offices and other sundry expenses	$8,416
Value of products	$322,517
Persons engaged in industry	527
Proprietors and officials	28
Proprietors and firm members	16
Number performing manual labor	4
Salaried officers of corporations	3
Superintendents and managers	9
Clerks and other salaried employees	8
Wage earners, Dec. 15, 1909, or nearest representative day (all above ground)	491
Engineers, firemen, mechanics, etc	25
Persons engaged in industry—Continued.	
Wage earners, Dec. 15, 1909, etc.—Continued.	
Miners, miners' helpers, and quarrymen	257
All other employees[2]	209
Number of wage earners employed on the 15th day of each month:	
January	178
February	142
March	235
April	376
May	388
June	410
July	439
August	430
September	481
October	430
November	355
December	320
Mineral land controlled, acres	1,038
Owned	524
Held under lease	514
Primary horsepower	815
Steam engines—	
Number	17
Horsepower	805
Gas or gasoline engines—	
Number	1
Horsepower	10

[1] Includes operators as follows: Limestone, 16; pumice, 2.

[2] Includes 2 boys under 16 years of age.

NEVADA.

Summary.—The gross value of the products of all mines and quarries in Nevada in 1909 amounted to $23,271,597. Deducting from this amount, $1,610,449, the value of the gold and silver ore sold by some operators to others who used it as material, leaves $21,661,148 as the net value of the products. Of this amount, gold and silver (deep and placer mines) and copper mining contributed $21,206,517, or 97.9 per cent.

In the production of placer gold the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Value.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	266	5,572	$23,271,597	$87,487	100.0	100.0	100.0
Individual	42	153	161,857	3,854	15.8	2.7	0.7
Firm	61	145	240,701	3,946	22.9	2.6	1.0
Corporation	163	5,274	22,869,039	140,301	61.3	94.7	98.3
Gold and silver, deep mines	218	3,818	17,807,945	81,688	100.0	100.0	100.0
Individual	33	115	138,912	4,209	15.1	3.0	0.8
Firm	48	102	202,902	4,227	22.0	2.7	1.1
Corporation	137	3,601	17,466,131	127,490	62.8	94.3	98.1

Table 2

	Incorporated.	Unincorporated.
Number of operators	163	103
Number of mines and quarries	254	120
Proprietors and firm members, total		213
Number performing manual labor		143
Salaried employees:		
Officers of corporations	89	
Superintendents and managers	176	9
Clerks and other salaried employees	201	3
Wage earners, Dec. 15, 1909, or nearest representative day	5,274	298
Capital	$119,191,207	$811,623
Expenses of operation and development	14,049,375	366,353
Salaries—		
Officers of corporations	192,520	
Superintendents and managers	411,761	6,567
Clerks and other salaried employees	264,658	550
Wages	5,758,163	166,907
Royalties and rent of mines	251,683	23,873
Taxes	240,809	2,320
Supplies and miscellaneous expenses	5,328,566	156,902
Cost of ore purchased	1,601,215	9,234
Value of products	22,869,039	402,558

Out of a total of 266 operators, 163, or 61.3 per cent were corporations. These corporations reported 98.3 per cent of the total value of the products and employed 94.7 per cent of all wage earners. In the operation of gold and silver, deep mines, the leading industry, the per cent of the number of wage earners and the value of products reported by corporations did not vary greatly from that for all industries combined. The average value of the product for each corporation in this industry, however, was $12,811 less than the average for corporations in all industries.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 266 enterprises reported, 9 employed over 100 wage earners each. The total number of wage earners employed by these 9 enterprises was 2,726, which represented nearly one-half of the total number employed in all enterprises. In the copper industry the 3 enterprises employing over 100 wage earners reported 98.8 per cent of all the wage earners employed in that industry.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	266	100.0	5,572	100.0
No wage earners	23	8.6		
Contract work	20	7.5		
1 to 5	100	37.6	279	5.0
6 to 20	79	29.7	877	15.7
21 to 50	22	8.3	753	13.5
51 to 100	13	4.9	937	16.8
Over 100	9	3.4	2,726	48.9
Gold and silver, deep mines	218	100.0	3,818	100.0
No wage earners	20	9.2		
Contract work	20	9.2		
1 to 5	79	36.2	230	6.0
6 to 20	61	28.0	675	17.7
21 to 50	21	9.6	730	19.1
51 to 100	11	5.0	806	21.1
Over 100	6	2.8	1,377	36.1
Copper	7	100.0	1,366	100.0
1 to 20	4	57.1	17	1.2
Over 20	3	42.9	1,349	98.8

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. For all industries combined a day of eight hours prevailed in 89.8 per cent of all enterprises weighted according to number of wage earners. For gold and silver, deep mines, and copper mines the corresponding percentages were 98.7 and 66.1, respectively.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 222	100.0	100.0
8 hours	215	96.8	89.8
9 hours	4	1.8	9.1
10 hours	3	1.4	1.1
Gold and silver, deep mines	177	100.0	100.0
8 hours	172	97.2	98.7
9 hours	3	1.7	1.0
10 hours	2	1.1	0.3
Copper	7	100.0	100.0
8 hours	6	85.7	66.1
9 hours	1	14.3	33.9

[1] Exclusive of 1 gold and silver, deep mine for which number of hours was not reported.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown by Table 5, was 26,862, of which 13,761 was developed by engines and water wheels or motors owned by the enterprises using them, and 13,101 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Gold and silver, deep mines.	Placer gold.	Copper.	All other.
Primary power:					
Aggregate horsepower	26,882	22,164	291	3,357	1,060
Owned	13,761	10,178	197	2,947	439
Steam engines—					
Number	81	62	1	13	5
Horsepower	8,719	5,399	8	2,935	377
Gas or gasoline engines—					
Number	176	152	20	1	3
Horsepower	4,496	4,233	189	12	62
Water wheels—					
Number	[1] 7	[1] 7	......	......	......
Horsepower	546	546	......	......	......
Electric motors operated by purchased current—					
Number	416	365	11	12	28
Horsepower	13,101	11,976	94	410	621
Electric motors run by current generated by enterprise using:					
Number	145	58	......	86	1
Horsepower	3,934	1,377	......	2,549	8

[1] Includes 2 water motors of 11 horsepower.

Development work.—Over $3,000,000 was expended in the state in 1909 in developing mining properties from which no products were reported. The principal data for all nonproducing enterprises combined and for gold and silver (deep mines), tungsten, and quicksilver mines separately, are given in Table 6.

Table 6

	NONPRODUCING MINES AND QUARRIES: 1909				
	Total.	Gold and silver, deep mines.	Tungsten.	Quicksilver.	All other.[1]
Number of operators	282	272	4	3	3
Capital	$36,604,278	$36,213,776	$28,602	$46,900	$315,000
Amount expended for development work	$3,121,477	$3,052,886	$16,910	$7,233	$44,448
Number of salaried employees	306	302	3	......	1
Number of wage earners employed Dec. 15, 1909, or nearest representative day	1,824	1,755	31	6	32
Primary horsepower	5,337	5,337	......	......	......

[1] Includes operators as follows: Gypsum, 1; limestone, 1; placer gold, 1.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for enterprises operated by governmental institutions. Such items as are comparable for the two years are presented in Table 7.

Table 7

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$6,801,126	$1,427,663	376.4
Supplies and materials	$4,686,788	$623,432	651.8
Royalties and rent of mines	$275,556	$50,003	451.1
Contract work	[1] $36,873	$7,944	364.2
Value of products	$21,661,148	$3,514,698	516.3
Primary horsepower	26,862	4,785	461.4

[1] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 8.

Duplication between manufactures and mining.—In the gypsum industry some of the mining operators subjected the crude product obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Nevada involves a duplication of $278,243.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 8	Aggregate.	PRODUCING MINES AND QUARRIES.								Nonproducing mines and quarries.[2]
		Total.	Gold and silver, deep mines.	Placer gold.	Copper.	Lead and zinc.	Gypsum.	Precious stones.	All other.[1]	
Number of operators	548	266	218	21	7	7	4	4	5	282
Number of mines and quarries	1,021	374	321	24	9	7	4	4	5	647
Capital	$156,607,108	$120,002,830	$102,986,526	$207,131	$15,617,784	$248,500	$670,627	$164,850	$107,412	$36,604,278
Expenses of operation and development	$17,537,205	$14,415,728	$11,604,478	$81,182	$2,321,136	$47,352	$288,398	$20,085	$75,077	$3,121,477
Services—										
Salaried officers of corporations, superintendents, and managers	$885,098	$610,848	$540,718	$6,424	$31,356	$750	$25,200	$2,400	$4,000	$274,250
Clerks and other salaried employees	$315,288	$265,208	$205,028	...	$49,354	$460	$8,750	...	$1,626	$50,080
Wage earners	$7,335,153	$5,925,070	$4,643,903	$53,964	$1,055,786	$28,827	$100,560	$12,081	$29,949	$1,410,083
Miscellaneous—										
Supplies	$4,174,615	$3,375,163	$2,604,920	$9,517	$669,675	$2,674	$66,766	$4,090	$27,621	$799,452
Cost of ore purchased	$1,610,449	$1,610,449	$1,610,449	...	...	...	...	...	...	...
Fuel and rent of power	$1,441,041	$1,311,625	$839,021	$2,910	$421,787	$79	$41,435	...	$6,393	$129,416
Royalties and rent of mines	$329,235	$275,556	$266,907	$6,093	...	...	$156	...	$2,400	$53,679
Taxes	$257,476	$243,129	$212,663	$340	$26,789	$425	$2,517	...	$395	$14,347
Contract work	$317,447	$196,768	$181,161	$100	$5,529	$9,978	...	...	...	$120,679
Rent of offices and other sundry expenses	$871,403	$601,912	$499,708	$1,844	$60,960	$4,169	$31,014	$1,524	$2,693	$269,491
Value of products	$23,271,597	$23,271,597	$17,607,846	$82,852	$4,948,369	$68,774	$278,243	$22,598	$85,018	...
Persons engaged in industry	8,785	6,263	4,384	144	1,414	68	169	21	65	2,522
Proprietors and officials	1,103	487	411	29	13	11	12	5	6	616
Proprietors and firm members	605	213	174	23	1	9	...	4	2	392
Number performing manual labor	221	143	117	18	1	5	...	...	2	78
Salaried officers of corporations	156	89	80	2	1	...	5	...	1	67
Superintendents and managers	342	185	157	4	11	2	7	1	3	157
Clerks and other salaried employees	286	204	156	...	35	2	10	...	2	82
Wage earners, Dec. 15, 1909, or nearest representative day	7,396	6,572	3,818	115	1,366	53	147	16	57	1,824
Above ground	3,557	2,912	1,581	60	1,077	10	147	13	34	645
Below ground	3,839	2,660	2,237	65	289	43	...	3	23	1,179
Men 16 years of age and over	7,395	6,571	3,817	115	1,366	63	147	16	57	1,824
Engineers, firemen, mechanics, etc.	1,094	826	583	18	193	8	11	1	12	268
Above ground	1,010	761	518	18	193	8	11	1	12	249
Below ground	84	65	65	...	...	...	...	...	...	19
Miners, miners' helpers, and quarrymen	3,920	2,705	2,147	92	330	44	61	15	26	1,215
Above ground	446	373	237	27	41	2	61	12	3	73
Below ground	3,474	2,332	1,910	66	289	42	...	3	23	1,142
All other employees	2,381	2,040	1,087	6	843	1	85	...	19	341
Above ground	2,100	1,777	825	5	843	...	85	...	19	323
Below ground	281	263	262	...	...	1	...	...	...	18
Boys under 16 years of age (above ground)	1	1	1	...	...	...	...	...	...	...
Number of wage earners employed on the 15th day of each month:										
January	5,633	4,577	3,396	13	976	11	133	12	36	1,056
February	5,444	4,554	3,339	12	1,007	15	137	12	32	890
March	5,726	4,723	3,459	19	1,067	15	135	9	19	1,003
April	5,909	4,885	3,577	17	1,093	15	144	12	27	1,024
May	6,158	5,012	3,638	54	1,123	13	157	11	16	1,146
June	6,130	4,953	3,560	50	1,149	11	136	11	36	1,177
July	5,878	4,646	3,547	68	831	11	141	10	38	1,232
August	6,179	4,906	3,702	70	916	12	149	10	47	1,273
September	5,850	4,564	3,440	67	854	13	134	11	45	1,286
October	5,884	4,457	3,236	71	935	34	127	13	41	1,427
November	5,630	4,159	2,905	51	960	46	145	14	38	1,471
December	5,657	4,264	2,959	36	1,017	51	145	16	40	1,393
Land controlled, acres	93,797	38,431	30,506	1,774	2,422	944	800	115	1,870	55,366
Owned	88,117	35,113	27,986	1,176	2,382	944	800	115	1,710	63,004
Held under lease	5,680	3,318	2,520	698	40	...	...	...	160	2,362
Mineral land	81,798	31,524	23,639	1,774	2,422	904	800	115	1,870	50,274
Owned	76,173	28,261	21,174	1,176	2,382	904	800	115	1,710	47,912
Held under lease	5,625	3,263	2,465	598	40	...	...	...	160	2,362
Timber land	108	8	8	...	...	...	...	...	...	100
Other land	11,891	6,899	6,859	...	...	40	...	...	...	4,992
Primary horsepower	32,199	28,862	22,154	291	3,357	82	886	...	112	5,337

---

[1] Includes operators as follows: Granite, 1; graphite, 1; iron, 1; quicksilver, 1; sulphur, 1.

[2] Includes operators as follows: Gold and silver, deep mines, 272; gypsum, 1; limestone, 1; placer gold, 1; quicksilver, 3; tungsten, 4.

NEW HAMPSHIRE.

Summary.—The total value of the products of all mines and quarries in New Hampshire in 1909 amounted to $1,308,597. Of this amount granite quarrying, the principal industry, reported products valued at $1,205,811, which represented 92.1 per cent of the total. The other industries represented, in each of which there was less than three operators, were clay, copper, mica, and scythestones. In the combined totals for these industries the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Tables 1 and 2 classify the producing mining operations of the state under form of organization, distinguishing corporations from other forms.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**45**	**1,520**	**$1,308,597**	**$29,080**	**100.0**	**100.0**	**100.0**
Individual	21	421	339,776	16,180	46.7	27.7	26.0
Firm	8	237	215,575	26,947	17.8	15.6	16.5
Corporation	16	862	753,246	47,078	35.6	56.7	57.6
Granite	**40**	**1,305**	**1,205,811**	**30,145**	**100.0**	**100.0**	**100.0**
Individual	21	421	339,776	16,180	52.5	32.3	28.2
Firm	7	225	213,415	30,488	17.5	17.2	17.7
Corporation	12	659	652,620	54,385	30.0	50.5	54.1

Table 2

	Incorporated.	Unincorporated.
Number of operators	16	29
Number of mines and quarries	19	34
Proprietors and firm members, total	....	42
Number performing manual labor	....	17
Salaried employees:		
Officers of corporations	5	....
Superintendents and managers	15	13
Clerks and other salaried employees	9	6
Wage earners, Dec. 15, 1909, or nearest representative day	862	658
Capital	$1,199,513	$346,990
Expenses of operation and development	757,200	447,766
Salaries—		
Officers of corporations	12,000	....
Superintendents and managers	18,849	14,770
Clerks and other salaried employees	3,964	3,905
Wages	578,176	348,176
Royalties and rent of mines	600	3,671
Taxes	2,891	2,360
Supplies and miscellaneous expenses	140,720	74,884
Value of products	753,246	555,351

Out of a total of 45 operators, 16 were corporations. These corporations reported 57.6 per cent of the total value of products and employed 56.7 per cent of all wage earners. In the granite quarrying industry the corresponding percentages were 54.1 and 50.5.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 1,520 wage earners employed in all enterprises, 899, or 59.2 per cent, were employed in the 8 enterprises employing over 50 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**45**	**100.0**	**1,520**	**100.0**
Contract work	1	2.2	....	....
1 to 5	10	22.2	25	1.6
6 to 20	13	28.9	150	9.9
21 to 50	13	28.9	446	29.3
51 to 100	4	8.9	296	19.5
Over 100	4	8.9	603	39.7
Granite	**40**	**100.0**	**1,305**	**100.0**
Contract work	1	2.5	....	....
1 to 5	10	25.0	25	1.9
6 to 20	11	27.5	129	9.9
21 to 50	12	30.0	425	32.6
Over 50	6	15.0	726	55.6

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except one enterprise operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	**44**	**100.0**	**100.0**
8 hours	25	56.8	76.3
9 hours	12	27.3	7.8
10 hours	7	15.9	15.9
Granite	**39**	**100.0**	**100.0**
8 hours	25	64.1	88.9
9 hours	12	30.8	9.1
10 hours	2	5.1	2.0

The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In 76.3 per cent of the enterprises weighted according to number of wage earners a day of eight hours prevailed.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in all producing mining enterprises in the state was 3,771, of which 3,137 horsepower was developed by engines owned by the enterprises using them and 634 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909		
	Total.	Granite.	All other.
Primary power:			
Aggregate horsepower	**3,771**	**3,402**	**369**
Owned	3,137	2,768	369
Steam engines—			
Number	85	79	7
Horsepower	3,037	2,668	359
Gas or gasoline engines—			
Number	4	4	....
Horsepower	100	100	....
Electric motors operated by purchased current—			
Number	17	17	....
Horsepower	534	534	....

Comparison of mining industries, 1902–1909.—Such data as are comparable between 1909 and 1902 are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	**1902**	Per cent of increase.
Wages and salaries	$979,840	$875,465	11.9
Supplies and materials	$155,358	$134,128	15.8
Royalties and rent of mines	$4,271	$2,372	80.1
Contract work	$9,246	....	....
Value of products	$1,308,597	$1,176,312	11.2
Primary horsepower	3,771	2,617	44.1

Duplication between manufactures and mining.—In the production of granite and scythestones, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in New Hampshire involves a duplication of $1,218,351.

DETAILED STATISTICS FOR MINING INDUSTRIES, 1909.

Table 7

	PRODUCING MINES AND QUARRIES.		
	Total.	Granite.	All other.[1]
Number of operators	46	40	5
Number of mines and quarries	53	46	7
Capital	$1,546,503	$891,030	$655,473
Expenses of operation and development	**$1,204,866**	**$1,053,085**	**$151,881**
Services—			
Salaried officers of corporations, superintendents and managers	$45,619	$41,820	$3,799
Clerks and other salaried employees	$7,869	$7,765	$103
Wage earners	$926,352	$831,176	$95,176
Miscellaneous—			
Supplies	$100,931	$65,548	$35,383
Fuel and rent of power	$54,427	$43,454	$10,973
Royalties and rent of mines	$4,271	$4,271	....
Taxes	$5,251	$4,526	$725
Contract work	$9,246	$9,246	....
Rent of offices and other sundry expenses	$51,000	$45,278	$5,722
Value of products	**$1,308,597**	**$1,205,811**	**$102,786**
Persons engaged in industry	**1,610**	**1,385**	**225**
Proprietors and officials	75	67	8
Proprietors and firm members, total	42	40	2
Number performing manual labor	17	17	....
Salaried officers of corporations	5	5	....
Superintendents and managers	28	22	6
Clerks and other salaried employees	15	13	2
Wage earners, Dec. 15, 1909, or nearest representative day	1,520	1,305	215
Above ground	1,492	1,305	187
Below ground	28	....	28
Men 16 years of age and over	1,518	1,303	215
Engineers, firemen, mechanics, etc	161	141	20
Above ground	159	141	18
Below ground	2	....	2
Miners, miners' helpers, quarrymen, and stonecutters	1,043	964	79
Above ground	1,017	964	53
Below ground	26	....	26
All other employees (all above ground)	314	198	116
Boys under 16 years of age (above ground)	2	2	....
Number of wage earners employed on the 15th day of each month:			
January	861	712	149
February	962	805	157
March	1,108	952	156
April	1,525	1,356	169
May	1,672	1,462	210
June	1,693	1,485	208
July	1,659	1,459	200
August	1,659	1,423	236
September	1,610	1,392	218
October	1,584	1,393	191
November	1,517	1,325	192
December	1,160	957	203
Land controlled, acres	**7,979**	**6,497**	**1,482**
Owned	7,776	6,294	1,482
Held under lease	203	203	....
Mineral land	7,429	5,947	1,482
Owned	7,228	5,746	1,482
Held under lease	201	201	....
Timber land	15	15	....
Other land	535	535	....
Primary horsepower	**3,771**	**3,402**	**369**

[1] Includes operators as follows: Clay, 1; copper, 1; mica, 2; scythestones, 1.

NEW JERSEY.

Summary.—The total value of the products of mines and quarries in 1909, as reported by the 131 operators, was $8,347,501. The most important industries for which separate statistics can be given were iron-ore mining, traprock quarrying, and clay mining. The statistics given for clay mining include only the enterprises engaged in mining and marketing the crude clay. Enterprises which subject any part of the crude clay to manufacturing processes before marketing have been included in the census of manufactures but omitted from the census of mines and quarries.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 131 operators in all industries, 62, or 47.3 per cent, were corporations. These corporations reported 87.4 per cent of the total value of products and employed 78.8 per cent of all wage earners. In the iron-mining industry all enterprises were operated by corporations.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**131**	**6,801**	**$8,347,501**	**$63,721**	**100.0**	**100.0**	**100.0**
Individual	49	1,049	803,189	16,392	37.4	15.4	9.6
Firm	20	394	246,725	12,336	15.3	5.8	3.0
Corporation	62	5,358	7,297,587	117,703	47.3	78.8	87.4
Iron	**8**	**2,095**	**1,651,091**	**206,386**	**100.0**	**100.0**	**100.0**
Corporation	8	2,095	1,651,091	206,386	100.0	100.0	100.0
Traprock	**55**	**1,608**	**1,166,345**	**21,206**	**100.0**	**100.0**	**100.0**
Individual	17	381	278,112	16,360	30.9	23.7	23.8
Firm	10	229	119,262	11,926	18.2	14.2	10.2
Corporation	28	998	768,971	27,463	50.9	62.1	65.9

Size of enterprises.—In Table 3 the producing mining industries of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 6,801 wage earners employed in all enterprises, 3,772, or 55.5 per cent, were employed in the 10 enterprises employing over 100 wage earners each.

Table 2

	Incorporated.	Unincorporated.
Number of operators	62	69
Number of mines and quarries	72	79
Proprietors and firm members, total	....	96
Number performing manual labor	....	14
Salaried employees:		
Officers of corporations	41	....
Superintendents and managers	59	21
Clerks and other salaried employees	127	21
Wage earners, Dec. 15, 1909, or nearest representative day	5,358	1,443
Capital	$7,882,934	$730,729
Expenses of operation and development	3,703,485	804,455
Salaries—		
Officers of corporations	59,260	....
Superintendents and managers	98,859	25,571
Clerks and other salaried employees	67,533	11,958
Wages	2,268,030	533,036
Royalties and rent of mines	84,893	16,133
Taxes	41,896	5,458
Supplies and miscellaneous expenses	1,083,014	212,299
Value of products	7,297,587	1,049,914

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**132**	**100.0**	**6,801**	**100.0**
Contract work	1	0.8	....	....
1 to 5	12	9.1	38	0.6
6 to 20	59	44.7	744	10.9
21 to 50	37	28.0	1,245	18.3
51 to 100	13	9.8	1,002	14.7
Over 100	10	7.6	3,772	55.5
Iron	**9**	**100.0**	**2,095**	**100.0**
6 to 100	4	44.4	195	9.3
Over 100	5	55.6	1,900	90.7
Traprock	**55**	**100.0**	**1,608**	**100.0**
1 to 20	30	54.5	391	24.3
21 to 50	17	30.9	583	36.3
Over 50	8	14.5	634	39.4

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except one enterprise operated exclusively by contract work, and one which failed to report hours of labor, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. For all industries combined, a day of 10 hours prevailed in 71.5 per cent of all enterprises weighted according to the number of wage earners employed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 130	100.0	100.0
8 hours	6	4.6	13.6
9 hours	20	15.4	5.8
10 hours	102	78.5	71.5
11 hours	2	1.5	9.1
Iron	9	100.0	100.0
8 hours	1	11.1	39.6
9 hours	2	22.2	6.4
10 hours	4	44.4	24.5
11 hours	2	22.2	29.5
Traprock	55	100.0	100.0
8 hours	2	3.6	2.1
9 hours	6	10.9	7.5
10 hours	47	85.6	90.4

[1] Exclusive of 1 granite quarry, for which number of hours was not reported.

Duplication between manufactures and mining.—In the production of granite, sandstone, slate, traprock, and talc and soapstone, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in New Jersey involves a duplication of $205,085.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in the producing enterprises was 18,048, of which 17,818 was developed by engines and water wheels owned by the enterprises using them and 230 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Iron.	Traprock.	Clay (sold as such).	All other.
Primary power:					
Aggregate horsepower	18,048	6,585	5,348	1,516	4,599
Owned	17,818	6,585	5,218	1,516	4,499
Steam engines—					
Number	254	82	78	32	62
Horsepower	17,585	6,585	5,141	1,475	4,384
Gas or gasoline engines—					
Number	10		3	5	2
Horsepower	193		77	41	75
Water wheels—					
Number	1				1
Horsepower	40				40
Electric motors operated by purchased current—					
Number	5		4		1
Horsepower	230		130		100
Electric motors run by current generated by enterprise using:					
Number	58	10			48
Horsepower	2,955	525			2,430

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$3,155,929	$2,277,852	38.6
Supplies and materials	$1,067,226	$892,030	19.6
Royalties and rent of mines	$101,523	$110,163	−7.8
Contract work	[2] $40,799	$10,770	278.8
Value of products	$8,548,858	$4,042,047	111.5
Primary horsepower	18,390	13,008	41.4

[1] A minus sign (−) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product which is included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	PRODUCING MINES AND QUARRIES.							
	Total.	Iron.	Traprock.	Sand-stone.	Lime-stone.	Granite.	Clay (sold as such).	All other.[1]
Number of operators	131	8	55	15	6	6	31	10
Number of mines and quarries	151	10	58	16	6	6	45	10
Capital	[2] $8,613,663	$3,612,024	$870,955	$176,285	$73,489	$31,479	$1,435,000	$2,199,649
Expenses of operation and development	$4,507,840	$1,321,915	$1,048,846	$143,456	$183,877	$52,371	$568,281	$1,209,093
Services—								
Salaried officers of corporations, superintendents, and managers	[3] $183,690	$49,798	$40,612	$6,236	$6,688	$958	$43,566	$32,832
Clerks and other salaried employees	[3] $79,491	$16,251	$17,834	$2,304	$1,782	$269	$15,365	$10,266
Wage earners	$2,801,066	$840,967	$591,476	$93,291	$115,384	$39,343	$345,841	$774,764
Miscellaneous—								
Supplies	$674,962	$199,707	$156,565	$17,973	$25,902	$8,491	$69,869	$196,455
Fuel and rent of power	$319,329	$168,368	$54,700	$4,704	$2,037	$2,161	$6,619	$80,740
Royalties and rent of mines	$101,026	$7,091	$36,830	$1,900	$6,109	$120	$15,751	$33,225
Taxes	[3] $47,354	$7,350	$5,172	$1,237	$189	$34	$6,100	$27,047
Contract work	$44,489		$29,550	$820			$14,119	
Rent of offices and other sundry expenses	[3] $256,533	$32,383	$116,206	$14,993	$5,786	$995	$51,051	$47,764
Value of products	$8,347,501	$1,651,091	$1,166,345	$187,272	$180,604	$60,174	$750,303	$4,351,712
Persons engaged in industry	[4] 7,178	2,148	1,722	240	451	122	988	1,497
Proprietors and officials	[4] 227	23	82	27	9	7	61	16
Proprietors and firm members	96		40	21	3	6	22	4
Number performing manual labor	14		6	2		2	4	
Salaried officers of corporations	[4] 41	6	13	3	1		13	3
Superintendents and managers	90	17	29	3	5	1	26	9
Clerks and other salaried employees	[4] 148	30	32	5	5	1	27	42
Wage earners, Dec. 15, 1909, or nearest representative day	6,801	2,095	1,608	208	437	114	900	1,439
Above ground	4,440	553	1,608	208	437	114	900	620
Below ground	2,361	1,542						819
Men 16 years of age and over	6,795	2,095	1,605	208	437	114	899	1,437
Engineers, firemen, mechanics, etc	641	302	123	14	26	10	44	122
Above ground	583	249	123	14	26	10	44	117
Below ground	58	63						5
Miners, miners' helpers, quarrymen, and stonecutters	3,810	1,134	598	169	219	27	683	980
Above ground	1,867		598	169	219	27	683	171
Below ground	1,943	1,134						809
All other employees	2,344	659	884	25	192	77	172	335
Above ground	1,984	304	884	25	192	77	172	330
Below ground	360	355						5
Boys under 16 years of age (all above ground)	6		3				1	2
Number of wage earners employed on the 16th day of each month:								
January	5,349	2,017	674	111	331	10	713	1,593
February	5,457	2,057	677	113	308	10	725	1,667
March	6,667	1,980	767	137	283	4	832	1,664
April	6,083	1,794	1,196	173	244	105	893	1,678
May	6,404	1,749	1,418	202	267	143	885	1,740
June	6,524	1,780	1,491	209	301	133	889	1,721
July	6,717	1,840	1,639	212	321	140	933	1,632
August	6,795	1,818	1,681	211	302	127	971	1,685
September	6,878	2,014	1,771	210	306	112	955	1,510
October	7,055	2,130	1,742	206	391	115	930	1,541
November	6,646	2,111	1,471	198	416	97	898	1,455
December	6,208	2,095	1,199	173	439	10	862	1,430
Land controlled, acres	26,809	13,668	1,448	247	662	156	7,855	2,772
Owned	14,329	5,169	845	244	109	91	5,809	2,062
Held under lease	12,480	8,499	604	3	553	65	2,046	710
Mineral land	23,780	12,968	1,384	118	202	156	6,580	2,372
Owned	11,740	4,469	780	115	89	91	4,534	1,662
Held under lease	12,040	8,499	604	3	113	65	2,046	710
Timber land	700	660					40	
Other land	2,329	40	66	129	460		1,235	400
Primary horsepower	18,048	6,685	5,348	694	585	216	1,516	3,125

---

[1] Includes operators as follows: Bluestone, 2; lead and zinc, 1; marl, 1; mineral pigments, 1; peat, 2; slate, 2; talc and soapstone, 1.

[2] Includes $214.782 which could not be distributed among the several industries.

[3] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $3,000; clerks and other salaried employees, $9,420; and taxes, $225.

[4] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 8; salaried officers of corporations, 2; and clerks and other salaried employees, 6.

NEW MEXICO.

Summary.—The total value of the products of all mines and quarries in New Mexico in 1909 amounted to $5,587,744. Of this amount, bituminous coal mining, the leading industry, contributed $3,984,660, or 71.3 per cent. Gold and silver mining (deep mines) and copper mining, the two industries next in importance, reported products valued, respectively, at $625,626 and $360,394. In each of these industries the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work, which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of New Mexico under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 98 enterprises, 50 were operated by corporations. These corporations reported 91.6 per cent of the total value of products and employed 88.8 per cent of all wage earners. Incorporated enterprises had a larger share in the production of bituminous coal than in other mining industries.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	98	5,682	$5,587,744	$57,018	100.0	100.0	100.0
Individual[1]	25	454	362,481	14,499	25.5	8.0	6.5
Firm	23	180	105,060	4,568	23.5	3.2	1.9
Corporation	50	5,048	5,120,203	102,404	51.0	88.8	91.6
Bituminous coal	16	3,490	3,984,660	249,041	100.0	100.0	100.0
Individual[1]	4	28	23,744	5,936	25.0	0.8	0.6
Firm	3	40	46,207	15,402	18.8	1.1	1.2
Corporation	9	3,422	3,914,709	434,968	56.3	98.1	98.2
Gold and silver, deep mines	47	960	625,626	13,311	100.0	100.0	100.0
Individual	10	121	196,232	19,623	21.3	12.6	31.4
Firm	14	112	52,835	3,774	29.8	11.7	8.4
Corporation	23	727	376,559	16,372	48.9	75.7	60.2

[1] Includes 1 estate.

Table 2

	Incorporated.	Unincorporated.
Number of operators	45	53
Number of mines and quarries	218	67
Proprietors and firm members, total		86
Number performing manual labor		39
Salaried employees:		
Officers of corporations	27	
Superintendents and managers	85	12
Clerks and other salaried employees	214	6
Wage earners, Dec. 15, 1909, or nearest representative day	5,048	634
Capital	$39,656,228	$469,446
Expenses of operation and development	5,195,484	357,939
Salaries—		
Officers of corporations	81,024	
Superintendents and managers	142,499	10,664
Clerks and other salaried employees	207,162	3,785
Wages	3,311,729	217,627
Royalties and rent of mines	27,414	51,581
Taxes	39,593	817
Supplies and miscellaneous expenses	1,386,063	73,465
Value of products	5,120,203	467,541

Size of enterprises.—In Table 3 the producing enterprises are classified according to the number of wage earners employed per enterprise or operating unit.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	103	100.0	5,682	100.0
No wage earners	2	1.9		
Contract work	5	4.9		
1 to 5	31	30.1	98	1.7
6 to 20	30	29.1	347	6.1
21 to 50	15	14.6	504	8.9
51 to 100	7	6.8	573	10.1
Over 100	13	12.6	4,160	7.23
Bituminous coal	21	100.0	3,490	100.0
Contract work	1	4.8		
1 to 5	5	23.8	17	0.5
6 to 20	5	23.8	68	1.9
21 to 100	4	19.0	198	5.7
Over 100	6	28.6	3,207	91.9
Gold and silver, deep mines	47	100.0	960	100.0
Contract work	3	6.4		
1 to 5	18	38.3	53	5.5
6 to 20	13	27.7	141	14.7
21 to 50	8	17.0	281	29.3
Over 50	5	10.6	485	50.5

Of the 5,682 wage earners in all enterprises, 4,160, or 73.2 per cent, were reported by the 13 enterprises employing over 100 wage earners each. For all industries combined, excluding those operated by contract, the average number of wage earners per enterprise was 58, while for the enterprises engaged in the production of bituminous coal the average per enterprise was 174.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprise.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 95	100.0	100.0
8 hours	30	31.6	6.6
9 hours	32	33.7	27.4
10 hours	32	33.7	65.3
12 hours	1	1.1	0.7
Bituminous coal	20	100.0	100.0
8 hours	3	15.0	1.0
9 hours	8	40.0	25.8
10 hours	9	45.0	73.2
Gold and silver, deep mines	43	100.0	100.0
8 hours	19	44.2	24.7
9 hours	18	41.9	60.5
10 hours	6	14.0	14.7

[1] Exclusive of 1 gold and silver, deep mine, for which number of hours was not reported.

Duplication between manufactures and mining.—In the production of gypsum and bituminous coal some of the operators subjected the crude products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in New Mexico involves a duplication of $1,178,078.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in all producing enterprises was 16,042, of which 14,542 horsepower was developed by engines owned by the enterprises using them and 1,500 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Gold and silver, deep mines.	Copper.	All other.
Primary power:					
Aggregate horsepower	**16,042**	**9,387**	**3,623**	**650**	**2,382**
Owned	14,542	7,887	3,623	650	2,382
Steam engines—					
Number	137	53	42	14	28
Horsepower	14,201	7,866	3,428	582	2,325
Gas or gasoline engines—					
Number	23	2	14	5	2
Horsepower	341	21	195	68	57
Electric motors operated by purchased current—					
Number	44	44			
Horsepower	1,500	1,500			
Electric motors run by current generated by enterprise using:					
Number	245	72	166	3	4
Horsepower	5,151	4,068	970	13	100

Comparison of mining industries: 1902–1909.—Such data as are comparable between 1909 and 1902 are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909 [1]	1902	Per cent of increase. [2]
Wages and salaries	$3,974,490	$1,856,402	114.1
Supplies and materials	$1,008,570	$497,949	102.5
Royalties and rent of mines	$78,995	$64,438	22.6
Contract work	[3] $22,487	$48,381	−53.5
Value of products	$5,587,744	$2,686,473	108.0
Primary horsepower	16,042	8,707	84.2

[1] Includes statistics for the production of coke at bituminous coal mines, which could not be deducted without disclosing the operations of an individual enterprise.

[2] A minus sign (−) denotes decrease.

[3] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.							Nonproducing mines and quarries.[2]
		Total.	Bituminous coal.	Gold and silver, deep mines.	Copper.	Gypsum.	Sandstone.	All other.[1]	
Number of operators	149	98	16	47	12	5	3	15	51
Number of mines and quarries	358	285	28	63	12	133	3	46	73
Capital [3]	$47,575,696	$40,126,674	$23,558,127	$10,692,341	$5,204,126	$382,675	$1,500	$286,905	$7,450,022
Expenses of operation and development	**$6,202,242**	**$5,553,423**	**$3,276,026**	**$1,122,873**	**$562,146**	**$92,543**	**$4,075**	**$498,761**	**$648,819**
Services—									
Salaried officers of corporations, superintendents, and managers	$285,929	$234,187	$97,688	$76,364	$20,275	$10,620	....	$29,340	$51,742
Clerks and other salaried employees	$231,225	$210,947	$147,436	$27,631	$19,367	$8,278	....	$10,335	$20,278
Wage earners	$3,818,807	$3,529,356	$2,459,397	$572,423	$198,495	$28,954	$2,940	$267,147	$289,451
Miscellaneous—									
Supplies	$938,630	$805,487	$328,639	$225,982	$111,336	$14,946	$635	$123,949	$133,143
Fuel and rent of power	$283,484	$203,083	$29,850	$83,921	$58,564	$13,787	....	$16,961	$80,401
Royalties and rent of mines	$79,110	$78,995	$6,712	$49,692	$353	$480	$400	$21,358	$115
Taxes	$46,916	$40,410	$27,071	$4,133	$6,158	$881	....	$2,167	$6,506
Contract work	$162,683	$132,535	$7,521	$23,618	$101,396	....	....	....	$30,148
Rent of offices and other sundry expenses	$355,458	$318,423	$170,811	$59,209	$46,202	$16,597	$100	$25,504	$37,035
Value of products	**$5,587,744**	**$5,587,744**	**$3,984,660**	**$625,626**	**$360,394**	**$106,864**	**$4,963**	**$505,137**	....
Persons engaged in industry	6,603	6,112	3,688	1,091	349	106	32	848	491
Proprietors and officials	292	210	52	100	21	8	3	26	82
Proprietors and firm members	130	86	13	49	14	....	3	7	44
Number performing manual labor	49	39	8	19	7	....	1	4	10
Salaried officers of corporations	41	27	14	8	....	2	....	3	14
Superintendents and managers	121	97	25	43	7	6	....	16	24
Clerks and other salaried employees	242	220	146	31	21	8	....	14	22
Wage earners, Dec. 15, 1909, or nearest representative day	6,069	5,682	3,490	960	307	90	29	808	387
Above ground	2,257	2,144	781	371	176	90	29	697	113
Below ground	3,812	3,538	2,709	589	131	....	....	109	274
Men 16 years of age and over	6,010	5,623	3,442	960	304	90	29	798	387
Engineers, firemen, mechanics, etc	543	489	207	148	72	1	1	60	54
Above ground	423	371	122	117	70	1	1	60	52
Below ground	120	118	85	31	2	....	....	....	2
Miners, miners' helpers, and quarrymen	3,642	3,408	2,324	513	143	37	13	378	234
Above ground	375	366	....	9	28	37	13	279	9
Below ground	3,267	3,042	2,324	504	115	....	....	99	225
All other employees	1,825	1,726	911	299	89	52	15	360	99
Above ground	1,430	1,378	641	245	75	52	15	350	52
Below ground	395	348	270	54	14	....	....	10	47
Boys under 16 years of age [4]	59	59	48	....	3	....	....	8	....
Number of wage earners employed on the 15th day of each month:									
January	4,737	4,436	3,530	471	189	61	....	195	301
February	5,073	4,754	3,676	654	199	60	....	165	319
March	5,002	4,673	3,576	706	179	50	....	162	329
April	5,328	4,985	3,662	636	202	76	25	384	343
May	5,327	4,962	3,516	677	220	55	25	469	365
June	5,414	5,079	3,461	735	260	49	26	548	336
July	5,749	5,407	3,589	785	312	50	29	642	342
August	5,684	5,326	3,543	801	237	53	3	689	358
September	5,882	5,576	3,623	838	255	56	....	804	306
October	5,618	5,307	3,417	730	316	73	....	771	311
November	5,631	5,364	3,444	805	272	51	....	792	267
December	5,703	5,415	3,455	822	256	90	....	792	288
Land controlled, acres	**467,626**	**397,174**	**294,318**	**74,817**	**4,090**	20,630	35	3,284	70,452
Owned	340,975	270,755	240,124	5,097	3,870	20,290	10	1,364	70,220
Held under lease	126,651	126,419	54,194	69,820	220	240	25	1,920	232
Mineral land	227,795	167,568	115,549	24,660	4,090	20,520	35	2,714	60,227
Owned	155,281	95,286	64,929	5,078	3,870	20,280	10	1,119	59,995
Held under lease	72,514	72,282	50,620	19,582	220	240	25	1,595	232
Timber land	9,625	....	....	....	....	....	....	....	9,625
Other land	230,206	229,606	178,769	50,257	....	10	....	570	600
Primary horsepower	**17,431**	**16,042**	**9,387**	**3,623**	**650**	**747**	....	1,635	1,389

---

[1] Includes operators as follows: Anthracite coal, 1; bismuth, 1; clay, 1; fluorspar, 1; granite, 1; iron, 1; lead and zinc, 2; limestone, 2; placer gold, 2; precious stones, 2; traprock, 1.

[2] Includes operators as follows: Bituminous coal, 1; gold and silver, deep mines, 49; placer gold, 1.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In the bituminous coal industry 30 boys were employed below ground.

NEW YORK.

Summary.—The gross value of the products of mining industries in New York in 1909 amounted to $13,334,975. Deducting from this amount, $65,656, the value of natural gas produced by some operators and sold to others, who sold it again, leaves $13,269,319 as the net value of the products. Of this amount stone quarries producing limestone, bluestone, traprock, sandstone, granite, marble, and slate, contributed $5,719,205, or 43.1 per cent. Iron-ore mining, the most important mining industry, reported products valued at $3,095,023. In the production of graphite, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties. The same conditions exist for the total of the six industries combined under the heading of "All other," in Table 7.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 1,351 operators of producing enterprises in all industries, 174, or 12.9 per cent, were corporations. These corporations reported 69.1 per cent of the total value of products and employed 70.3 per cent of all wage earners. In the iron-ore industry all enterprises, except one, were conducted by corporations.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	1,351	11,303	$13,334,976	$9,870	100.0	100.0	100.0
Individual	587	1,960	1,714,117	2,920	43.4	17.3	12.9
Firm	578	1,379	2,381,883	4,121	42.8	12.2	17.9
Corporation	174	7,944	9,210,581	52,934	12.9	70.3	69.1
Other	12	20	28,394	2,366	0.9	0.2	0.2
Petroleum and natural gas	708	374	2,666,996	3,770	100.0	100.0	100.0
Individual	227	74	534,507	2,355	32.1	19.8	20.0
Firm	423	140	1,190,238	2,814	59.7	37.4	44.6
Corporation	49	151	921,470	18,806	6.9	40.4	34.5
Other	9	9	22,781	2,531	1.3	2.4	0.9
Limestone	127	3,104	2,656,142	20,915	100.0	100.0	100.0
Individual	73	616	391,067	5,357	57.5	19.8	14.7
Firm	14	350	309,357	22,098	11.0	11.3	11.6
Corporation	40	2,138	1,955,718	48,893	31.5	68.9	73.6

Size of enterprises.—In Table 3 the producing mining enterprises are classified according to the number of wage earners employed per enterprise or operating unit. Only 28 enterprises, or 2.1 per cent of the total number, employed over 100 wage earners each. These enterprises, however, employed more than one-half of all wage earners. In the production of petroleum and natural gas the average number of wage earners per enterprise was less than 1. This was due to the fact that 90 enterprises were operated without any wage earners at all and 464 were operated by contract work or by wage earners who gave only a part of their time to the enterprise.

Table 2

	Incorporated.	Unincorporated.
Number of operators	174	1,177
Number of mines and quarries	161	591
Number of wells	1,696	9,646
Proprietors and firm members, total	....	2,294
Number performing manual labor	....	663
Salaried employees:		
Officers of corporations	114	....
Superintendents and managers	163	70
Clerks and other salaried employees	242	44
Wage earners, Dec. 15, 1909, or nearest representative day	7,944	3,359
Capital	$30,994,957	$14,176,275
Expenses of operation and development	7,344,419	2,643,349
Salaries—		
Officers of corporations	213,396	....
Superintendents and managers	227,230	55,150
Clerks and other salaried employees	193,552	18,537
Wages	3,446,176	1,271,419
Royalties and rent of mines	276,617	188,837
Taxes	130,784	43,205
Supplies and miscellaneous expenses	2,791,170	1,066,039
Cost of natural gas purchased and resold	65,494	162
Value of products	9,210,581	4,124,394

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	1,351	100.0	11,303	100.0
No wage earners	189	14.0	....	....
Contract work and part-time employees	471	34.9	....	....
1 to 5	451	33.4	941	8.3
6 to 20	131	9.7	1,346	11.9
21 to 50	65	4.8	2,088	18.6
51 to 100	16	1.2	1,171	10.4
Over 100	28	2.1	6,757	50.9
Iron	14	100.0	2,542	100.0
6 to 50	5	35.7	144	5.7
Over 50	9	64.3	2,398	94.3
Petroleum and natural gas	708	100.0	374	100.0
No wage earners	90	12.7	....	....
Contract work and part-time employees	464	65.5	....	....
1 to 5	141	19.9	226	60.4
Over 5	13	1.8	148	39.6
Limestone	127	100.0	3,104	100.0
No wage earners	5	3.9	....	....
Contract work	3	2.4	....	....
1 to 5	53	41.7	157	5.1
6 to 20	34	26.8	346	11.1
21 to 50	20	15.7	620	20.0
Over 50	12	9.4	1,981	63.8

Persons employed in mining.—Of the 14,230 persons employed in producing mines December 15, 1909, or the nearest representative day, 11,303 were wage earners, 633 were salaried employees, and 2,294 were proprietors and firm members. Of the proprietors and firm members 663 performed manual labor in or about the mines. The relatively small number of wage earners in the mining industry working underground, 18 per cent, is explained by the large number employed in stone quarries.

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In 85.1 per cent of all enterprises weighted according to the number of wage earners, a day of 10 hours prevailed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 537	100.0	100.0
8 hours and under	34	6.3	6.7
9 hours	55	10.2	7.9
10 hours	446	83.1	85.1
11 hours	1	0.2	0.3
12 hours	1	0.2	0.1
Iron	14	100.0	100.0
10 hours	14	100.0	100.0
Limestone	120	100.0	100.0
8 hours	22	18.3	16.5
9 hours	17	14.2	9.1
10 hours	81	67.5	74.3

[1] Exclusive of petroleum and natural gas, and of 1 slate quarry, for which number of hours was not reported.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in the producing enterprises was 101,759, of which 91,076 was developed by engines and water wheels owned by the enterprises using them, and 10,683 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Iron.	Petroleum and natural gas.	Limestone.	All other.
Primary power:					
Aggregate horsepower	101,759	22,520	41,797	16,980	20,462
Owned	91,076	18,220	41,797	14,277	16,782
Steam engines—					
Number	2,283	124	1,761	182	216
Horsepower	68,594	17,223	25,378	14,139	11,854
Gas or gasoline engines—					
Number	1,216	6	1,173	4	33
Horsepower	18,213	747	16,419	24	1,023
Water wheels—					
Number	38	2	....	4	32
Horsepower	4,269	250	....	114	3,905
Electric motors operated by purchased current—					
Number	147	42	....	36	69
Horsepower	10,683	4,300	....	2,703	3,680
Electric motors run by current generated by enterprise using:					
Number	81	30	....	12	39
Horsepower	2,319	966	....	211	1,142

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and for the operation of enterprises operated by governmental institutions, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES		
	1909	1902	Per cent of increase.
Wages and salaries	$5,693,286	$4,517,851	26.0
Supplies and materials	$2,647,861	$1,627,489	62.7
Royalties and rent of mines	$468,646	$357,637	31.0
Contract work	[1] $374,435	$350,663	6.8
Value of products	$13,849,494	$9,682,457	43.0
Primary horsepower	102,540	63,953	60.3

[1] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in New York involves a duplication of $10,312,289.

	Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.					
			Total.	Iron.	Petroleum and natural gas.	Limestone.	Bluestone.	Traprock.
1	Number of operators	1,356	1,351	14	708	127	350	8
2	Number of mines, quarries, and wells	12,097	12,094	19	11,342	140	413	8
3	Capital[2]	$45,333,052	$45,171,232	$12,613,215	$14,903,354	$4,169,316	$702,033	$1,668,929
4	**Expenses of operation and development**	**$10,004,532**	**$9,887,768**	**$2,118,287**	**$1,558,681**	**$2,111,852**	**$681,580**	**$588,857**
	Services—							
5	Salaried officers of corporations, superintendents, and managers.	$497,576	$495,776	$81,987	$61,726	$119,576	$28,292	$20,048
6	Clerks and other salaried employees	$212,089	$212,089	$57,223	$26,315	$39,938	$6,246	$13,647
7	Wage earners	$4,723,315	$4,717,595	$1,001,025	$236,943	$1,230,926	$441,053	$272,785
	Miscellaneous—							
8	Supplies	$1,889,747	$1,886,937	$556,997	$420,408	$295,000	$65,939	$88,790
9	Cost of natural gas purchased and resold	$65,656	$65,656		$65,656			
10	Fuel and rent of power	$585,161	$585,161	$199,817	$8,689	$146,564	$17,517	$33,665
11	Royalties and rent of mines	$465,458	$465,454	$62,668	$195,802	$28,941	$30,642	$70,829
12	Taxes	$174,389	$173,989	$51,491	$64,657	$18,934	$1,987	$7,666
13	Contract work	$516,542	$513,042	$20,632	$405,184	$33,418	$4,963	
14	Rent of offices and other sundry expenses	$874,599	$872,069	$86,427	$73,311	$198,355	$94,951	$81,227
15	**Value of products**	**$13,334,975**	**$13,334,875**	**$3,095,023**	**$2,668,998**	**$2,656,142**	**$910,054**	**$755,128**
16	**Persons engaged in industry**	14,253	14,230	2,637	2,087	3,346	1,657	800
17	Proprietors and officials	2,651	2,641	34	1,657	187	503	10
18	Proprietors and firm members	2,303	2,294	1	1,582	105	474	1
19	Number performing manual labor	665	663		179	44	381	
20	Salaried officers of corporations	114	114	10	34	19	7	1
21	Superintendents and managers	234	233	23	41	63	22	8
22	Clerks and other salaried employees	286	286	61	66	55	11	12
23	Wage earners, Dec. 15, 1909, or nearest representative day	11,316	11,303	2,542	374	3,104	1,143	778
24	Above ground	9,282	9,269	1,049	374	3,104	1,143	778
25	Below ground	2,034	2,034	1,493				
26	Men 16 years of age and over	11,308	11,295	2,541	374	3,099	1,143	776
27	Engineers, firemen, mechanics, etc	1,340	1,336	356	291	305	50	46
28	Above ground	1,298	1,294	322	291	305	50	46
29	Below ground	42	42	34				
30	Miners, miners' helpers, quarrymen, and stonecutters.	6,317	6,312	1,400		1,694	815	394
31	Above ground	4,687	4,682	158		1,694	815	394
32	Below ground	1,630	1,630	1,242				
33	All other employees	3,651	3,647	785	83	1,100	278	336
34	Above ground	3,290	3,286	569	83	1,100	278	336
35	Below ground	361	361	216				
36	Boys under 16 years of age[3]	8	8	1		5		2
	Number of wage earners employed on the 15th day of each month:							
37	January	5,932	5,922	1,885	346	1,428	485	116
38	February	6,081	6,071	1,922	334	1,457	522	81
39	March	7,057	7,047	1,909	341	1,657	605	633
40	April	8,844	8,834	1,832	338	2,501	973	699
41	May	10,037	10,027	1,792	384	2,988	1,187	747
42	June	10,567	10,557	1,884	382	3,242	1,224	712
43	July	10,904	10,894	2,008	383	3,369	1,166	786
44	August	11,223	11,213	2,175	370	3,644	1,182	766
45	September	11,279	11,269	2,333	369	3,578	1,108	814
46	October	11,068	11,053	2,353	382	3,442	1,073	748
47	November	10,264	10,251	2,387	374	3,180	833	773
48	December	8,540	8,527	2,510	370	2,145	531	693
49	**Land controlled, acres**	**508,386**	**495,579**	**247,783**	**222,503**	**3,954**	**4,929**	**718**
50	Owned	315,896	305,089	239,564	50,243	3,479	3,820	418
51	Held under lease	192,490	190,490	8,219	172,260	475	1,109	300
52	Mineral and oil land	335,140	332,733	95,920	222,503	3,349	2,661	678
53	Owned	147,154	146,747	87,701	50,243	2,961	1,732	398
54	Held under lease	187,986	185,986	8,219	172,260	388	929	280
55	Timber land	150,255	140,085	131,633		117	1,285	25
56	Other land	22,991	22,761	20,230		488	983	15
57	**Primary horsepower**	**101,759**	**101,759**	**22,520**	**41,797**	**18,880**	**1,565**	**3,575**

---

[1] Includes operators as follows: Clay, 2; infusorial earth, 1; mica, 1; pyrite, 1; quartz, 1.

[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

MINING INDUSTRIES: 1909.

	PRODUCING MINES, QUARRIES, AND WELLS—continued.												Nonproducing mines, quarries, and wells.
	Sandstone.	Granite.	Marble.	Slate.	Gypsum.	Talc and soapstone.	Graphite.	Garnet.	Feldspar.	Corundum and emery.	Buhrstones and millstones.	All other.[1]	
1	50	28	10	10	13	5	4	3	3	3	9	6	5
2	62	32	11	10	15	7	5	4	4	5	9	8	3
3	$885,229	$895,443	$1,065,232	$244,050	$1,811,897	$5,104,033	$661,480	$181,858	$84,950	$16,909	$1,685	$261,619	$161,820
4	$429,588	$385,095	$306,691	$99,424	$817,714	$253,911	$176,454	$98,206	$45,475	$6,523	$6,981	$192,839	$16,764
5	$26,135	$22,639	$34,911	$3,547	$53,924	$21,172	$7,290	$3,550	$3,820	$1,044		$6,115	$1,800
6	$4,027	$7,944	$5,759	$468	$35,442	$6,661	$1,450	$900	$909			$5,160	
7	$298,146	$270,316	$175,233	$65,911	$402,874	$70,128	$88,025	$40,204	$17,656	$2,781	$6,075	$97,514	$5,720
8	$30,738	$40,374	$34,793	$10,785	$202,920	$47,945	$39,813	$19,491	$1,793	$218	$140	$30,793	$2,810
9													
10	$11,908	$17,884	$24,048	$6,904	$61,671	$5,181	$21,746	$5,795	$3,630			$20,142	
11	$8,424	$4,934	$850	$5,784	$23,467	$20,793	$1,325	$6,850	$1,407	$708	$168	$1,862	$4
12	$2,146	$2,161	$2,878	$405	$6,495	$7,669	$1,181	$4,869	$445	$11	$13	$981	$400
13	$30,453	$350	$11,650		$1,487							$4,905	$3,500
14	$17,621	$18,493	$16,569	$5,620	$129,434	$74,362	$15,624	$16,547	$15,815	$1,761	$585	$25,367	$2,530
15	$508,638	$444,435	$344,981	$99,827	$1,048,403	$314,724	$138,805	$101,820	$47,168	$16,389	$12,798	$171,448	
16	970	614	326	197	737	220	190	120	69	17	31	212	23
17	84	48	24	17	27	14	5	7	6	2	10	6	10
18	58	28	11	12				5	4		10	3	9
19	25	8	2	6				2	4		9	3	2
20	3	7	8	2	12	10						1	
21	23	13	5	3	15	4	5	2	2	2		2	1
22	9	10	8	1	42	11	2	1	2			5	
23	877	556	294	179	668	195	183	112	61	15	21	201	13
24	877	556	294	135	341	132	183	112	45	15	21	110	13
25				44	327	63			16			91	
26	877	556	294	179	668	195	183	112	61	15	21	201	13
27	67	43	40	28	44	4	25	7	7	1		32	4
28	57	43	40	23	43	3	25	7	6	1		32	4
29				5	1	1			1				
30	740	426	127	145	263	69	84	39	35	13	21	47	5
31	740	426	127	110	14	7	84	39	35	13	21	5	5
32				35	249	62						42	
33	80	87	127	6	361	122	74	66	19	1		122	4
34	80	87	127	2	284	122	74	66	4	1		73	4
35				4	77				15			49	
36													
37	30	220	186	87	509	214	147	61	40	5	18	145	10
38	31	226	213	89	575	214	135	63	47	4	17	141	10
39	134	265	239	104	586	188	127	62	12	4	20	161	10
40	673	324	245	112	567	166	137	70	15	4	20	158	10
41	868	404	258	128	595	180	148	103	49	5	19	172	10
42	854	491	280	135	675	137	194	104	52	5	19	167	10
43	877	540	300	138	609	177	180	115	47	11	4	184	10
44	853	581	306	132	589	200	116	107	26	13	7	146	10
45	787	588	248	149	611	214	123	129	14	13	19	172	10
46	647	596	291	123	628	221	164	129	59	6	18	173	15
47	580	344	268	110	661	202	182	115	30	6	18	188	13
48	295	225	262	142	654	191	173	82	31	6	16	201	13
49	1,587	690	313	213	1,824	308	3,246	5,396	144	631	249	1,091	12,807
50	1,350	607	272		556	119	2,734	1,396	4	1	225	301	10,807
51	237	83	41	213	1,268	189	512	4,000	140	630	24	790	2,000
52	1,053	630	313	213	1,702	308	843	996	15	631	62	856	2,407
53	893	547	272		514	119	331	696		1	38	301	407
54	160	83	41	213	1,188	189	512	300	15	630	24	555	2,000
55	10						2,335	4,300	125		80	175	10,170
56	524	60			122		68	100	4		107	60	230
57	1,304	3,379	1,087	410	3,174	3,720	800	815	220			913	

[1] In the iron mining industry 1 boy was employed below ground.

NORTH CAROLINA.

Summary.—The total value of the products of all mines and quarries in North Carolina in 1909 was $1,358,617. Of this amount, granite quarries contributed $766,931, or over one-half.

In the total for all industries, the expenses of operation and development exceeded the value of the products, the excess occurring in industries which are not shown separately in the general table. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	118	2,825	$1,358,817	$11,514	100.0	100.0	100.0
Individual	41	228	92,216	2,249	34.7	8.1	6.8
Firm	47	487	214,975	4,574	39.8	17.2	15.8
Corporation	30	2,110	1,051,426	35,048	25.4	74.7	77.4
Granite	32	1,568	768,931	23,967	100.0	100.0	100.0
Individual	9	77	55,342	6,149	28.1	4.9	7.2
Firm	12	263	108,086	9,007	37.5	16.8	14.1
Corporation	11	1,228	603,503	54,864	34.4	78.3	78.7

Table 2

	Incorporated.	Unincorporated.
Number of operators	30	88
Number of mines and quarries	37	93
Proprietors and firm members, total	....	165
Number performing manual labor	....	63
Salaried employees:		
Officers of corporations	12	....
Superintendents and managers	39	15
Clerks and other salaried employees	35	3
Wage earners, Dec. 15,1909, or nearest representative day	2,110	715
Capital	$5,686,066	$299,046
Expenses of operation and development	1,177,979	238,096
Salaries—		
Officers of corporations	22,110	....
Superintendents and managers	51,280	8,256
Clerks and other salaried employees	31,480	9,916
Wages	708,995	153,767
Royalties and rent of mines	13,268	6,944
Taxes	6,286	1,279
Supplies and miscellaneous expenses	344,560	57,934
Value of products	1,051,426	307,191

Out of a total of 118 operators, 30 were corporations. These corporations reported 77.4 per cent of the total value of products and employed 74.7 per cent of all wage earners.

Size of enterprises.—In Table 3 the producing mining enterprises are classified according to the number of wage earners employed. Of the 118 enterprises reported, only 6 employed more than 100 wage earners each. These enterprises, however, employed over one-half of the wage earners reported by all enterprises.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	118	100.0	2,825	100.0
No wage earners	9	7.6	....	....
Contract work	2	1.7	....	....
1 to 5	44	37.3	133	4.7
6 to 20	37	31.4	417	14.8
21 to 50	17	14.4	514	18.2
51 to 100	3	2.5	226	8.0
Over 100	6	5.1	1,535	54.3
Granite	32	100.0	1,588	100.0
1 to 5	5	15.6	20	1.3
6 to 20	13	40.6	142	9.1
21 to 50	9	28.1	291	18.6
Over 50	5	15.6	1,115	71.1

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earnest and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	107	100.0	100.0
8 hours	5	4.7	24.4
9 hours	14	13.1	22.3
10 hours	86	80.4	48.8
11 hours	1	0.9	0.6
12 hours	1	0.9	3.9
Granite	32	100.0	100.0
8 hours	2	6.3	39.1
9 hours	11	34.4	37.5
10 hours	19	59.4	23.4

Only 24.4 per cent of the enterprises, weighted according to the number of wage earners, were operated on an 8-hour basis, while in nearly one-half of the enterprises so weighted a day of 10 hours prevailed.

Engines and power.—As shown by Table 5, the aggregate horsepower employed by producing enterprises was 6,062, of which 5,692 was developed by engines and water wheels owned by the enterprises using them and 370 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Granite.	Talc and soapstone.	Placer gold.	All other.
Primary power:					
Aggregate horsepower	6,062	2,981	1,003	310	1,768
Owned	5,692	2,636	998	310	1,748
Steam engines—					
Number	115	55	15	7	38
Horsepower	5,412	2,636	878	310	1,588
Water wheels—					
Number	6	....	4	....	2
Horsepower	280	....	120	....	160
Electric motors operated by purchased current—					
Number	10	7	1	....	2
Horsepower	370	345	5	....	20
Electric motors run by current generated by enterprise using:					
Number	5	4	....	1	....
Horsepower	26	20	....	6	....

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for enterprises operated by governmental institutions, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$1,005,826	$599,959	67.6
Supplies and materials	$268,315	$118,494	126.4
Royalties and rent of mines	$21,412	$19,971	7.2
Contract work	[2] $3,340	$9,000	—62.9
Value of products	$1,402,765	$924,676	51.7
Primary horsepower	6,225	3,746	66.2

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in North Carolina involves a duplication of $494,489.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.							Nonproducing mines and quarries.[2]
		Total.	Granite.	Mica.	Talc and soapstone.	Placer gold.	Monazite and zircon.	All other.[1]	
Number of operators	127	118	32	63	5	4	3	11	9
Number of mines and quarries	145	130	41	64	5	4	3	13	15
Capital	[3] $6,088,434	[3] $5,985,112	$2,065,381	$370,074	$159,200	$365,000	$58,000	$2,967,457	$103,322
Expenses of operation and development	**$1,436,829**	**$1,416,075**	**$758,459**	**$50,522**	**$66,650**	**$54,255**	**$44,797**	**$441,392**	**$20,754**
Services—									
Salaried officers of corporations, superintendents, and managers	[4] $83,028	[4] $81,646	$30,269	$4,167	$6,200	$3,500	$3,100	$31,120	$1,382
Clerks and other salaried employees	[4] $43,774	[4] $41,396	$17,969	....	$1,916	$8,000	$600	$12,311	$2,378
Wage earners	$868,947	$862,762	$519,777	$32,499	$34,844	$18,583	$5,046	$252,013	$6,185
Miscellaneous—									
Supplies	$157,336	$152,714	$48,975	$1,344	$6,185	$14,210	$1,750	$80,250	$4,622
Fuel and rent of power	$107,148	$103,319	$42,341	$342	$10,850	$6,972	$770	$42,044	$3,829
Royalties and rent of mines	$20,212	$20,212	$5,515	$5,659	$3,300	....	$100	$5,638	....
Taxes	[4] $7,689	[4] $7,565	$2,918	$315	$600	$500	$291	$2,790	$124
Contract work	$37,586	$37,386	$700	$6,036	$150	....	$30,500	....	$200
Rent of offices and other sundry expenses	[4] $111,109	[4] $109,075	$90,005	$160	$2,605	$2,490	$2,640	$15,226	$2,034
Value of products	**$1,358,617**	**$1,358,617**	**$766,831**	**$73,878**	**$77,833**	**$57,319**	**$47,178**	**$335,378**	....
Persons engaged in industry	**[5] 3,175**	**[5] 3,094**	**1,642**	**389**	**102**	**66**	**34**	**855**	**81**
Proprietors and officials	[5] 247	[5] 231	60	115	10	3	8	31	16
Proprietors and firm members	176	165	36	108	5	2	6	8	11
Number performing manual labor	66	63	3	58	....	....	....	2	3
Salaried officers of corporations	[5] 12	[5] 12	5	....	1	....	....	4	....
Superintendents and managers	[5] 59	[5] 54	19	7	4	1	2	19	5
Clerks and other salaried employees	[5] 38	[5] 38	14	....	3	....	1	18	....
Wage earners, Dec. 15, 1909, or nearest representative day	2,890	2,825	1,568	274	89	63	25	806	65
Above ground	2,320	2,274	1,568	76	59	63	25	483	46
Below ground	570	551	....	198	30	....	....	323	19
Men 16 years of age and over	2,867	2,804	1,561	271	88	63	25	796	63
Engineers, firemen, mechanics, etc	235	230	92	23	9	19	....	87	5
Above ground	202	197	92	4	9	19	....	73	5
Below ground	33	33	....	19	....	....	....	14	....
Miners, miners' helpers, quarrymen, and stonecutters	1,706	1,649	951	243	51	12	25	367	57
Above ground	1,182	1,142	951	67	21	12	25	66	40
Below ground	524	507	....	176	30	....	....	301	17
All other employees	926	925	518	5	28	32	....	342	1
Above ground	915	914	518	2	28	32	....	334	1
Below ground	11	11	....	3	....	....	....	8	....
Boys under 16 years of age[6]	23	21	7	3	1	....	....	10	2
Number of wage earners employed on the 15th day of each month:									
January	1,905	1,859	1,077	103	75	52	8	544	46
February	2,057	2,011	1,164	122	67	52	24	582	46
March	2,048	2,002	1,089	105	70	52	8	678	46
April	2,035	1,997	1,136	88	61	60	20	632	38
May	2,041	2,027	1,183	78	57	60	8	641	14
June	2,234	2,220	1,213	115	60	65	2	765	14
July	2,298	2,279	1,277	127	72	65	21	717	19
August	2,440	2,424	1,444	145	76	65	21	673	16
September	2,462	2,436	1,411	177	89	55	2	702	26
October	2,487	2,461	1,399	157	99	63	21	722	26
November	2,526	2,505	1,454	151	81	63	25	731	21
December	2,384	2,357	1,325	118	82	52	25	755	27
Land controlled, acres	**77,580**	**75,296**	**1,455**	**9,358**	**498**	**2,915**	**50,450**	**10,620**	**2,284**
Owned	46,909	45,971	1,272	6,449	168	2,915	30,355	4,812	938
Held under lease	30,671	29,325	183	2,909	330	....	20,095	5,808	1,346
Mineral land	72,011	69,817	922	9,092	428	1,605	50,450	7,320	2,194
Owned	44,910	43,972	739	6,293	168	1,605	30,355	4,812	938
Held under lease	27,101	25,845	183	2,799	260	....	20,095	2,508	1,256
Timber land	1,356	1,266	65	201	....	700	....	300	90
Other land	4,213	4,213	468	65	70	610	....	3,000	....
Primary horsepower	**6,368**	**6,062**	**2,981**	**53**	**1,003**	**310**	**45**	**1,670**	**306**

---

[1] Includes operators as follows: Barytes, 1; buhrstones and millstones, 1; clay, 2; copper, 1; gold and silver, deep mines, 2; iron, 1; limestone, 2; marble, 1.

[2] Includes operators as follows: Chromite, 1; garnet, 1; gold and silver, deep mines, 2; mica, 3; placer gold, 1; tin, 1.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $3,300; clerks and other salaried employees, $600; and taxes, $151.

[5] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 6; salaried officers of corporations, 2; superintendents and managers, 2; clerks and other salaried employees, 2.

[6] The 2 boys reported by nonproducing enterprises were employed below ground.

NORTH DAKOTA.

Summary.—Only 53 operators of mining enterprises were reported from North Dakota in 1909. Of these, 52 were engaged in the production of bituminous coal and 1 in the production of petroleum and natural gas. Detailed statistics for these enterprises are presented in Table 1.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 1	All industries.[1]
Number of operators	53
Number of mines, quarries, and wells	59
Capital	$1,058,649
Expenses of operation and development	$570,140
Services—	
Salaried officers of corporations, superintendents, and managers	$34,372
Clerks and other salaried employees	$28,217
Wage earners	$364,321
Miscellaneous—	
Supplies	$95,352
Fuel and rent of power	$12,835
Royalties and rent of mines	$10,647
Taxes	$4,300
Contract work	$1,325
Rent of offices and other sundry expenses	$18,771
Value of products	$564,812
Persons engaged in industry	960
Proprietors and officials	79
Proprietors and firm members	51
Number performing manual labor	19
Salaried officers of corporations	8
Superintendents and managers	22
Clerks and other salaried employees	21
Wage earners, Dec. 15, 1909, or nearest representative day	860
Above ground	202
Below ground	658
Engineers, firemen, mechanics, etc	51
Above ground	45
Below ground	6
Miners and miners' helpers	581
Below ground	581
All other employees [2]	228
Above ground	157
Below ground [2]	71

	All industries.[1]
Number of wage earners employed on the 15th day of each month:	
January	742
February	727
March	827
April	414
May	351
June	324
July	387
August	394
September	454
October	719
November	756
December	851
Land controlled, acres	34,695
Owned	12,300
Held under lease	22,395
Mineral and oil land	30,356
Owned	7,971
Held under lease	22,385
Other land	4,339
Primary horsepower	2,025
Steam engines—	
Number	37
Horsepower	2,014
Gas or gasoline engines—	
Number	2
Horsepower	11
Electric motors run by current generated by enterprise using:	
Nnmber	26
Horsepower	565

[1] Includes operators as follows: Bituminous coal, 52; petroleum and natural gas, 1

[2] Includes 1 boy under 16 years of age.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement. Such items as are comparable for the two years are presented in Table 2.

The value of products increased 73.3 per cent, and the amount paid for wages and salaries, 84.8 per cent.

Table 2	1909	1902	Per cent of increase.[1]
Wages and salaries	$426,910	$231,014	84.8
Supplies and materials	$108,187	$86,467	25.1
Royalties and rent of mines	$10,647	$1,407	656.7
Contract work	$1,325	$2,795	—52.6
Value of products	$564,812	$325,967	73.3
Primary horsepower	2,025	839	141.4

[1] A minus sign (—) denotes decrease.

OHIO.

Summary.—The gross value of the products of all mines, quarries, and wells in Ohio in 1909 amounted to $63,767,112. Deducting from this amount, $5,376,075, the value of the natural gas produced and sold by some operators to others who sold it again, leaves $58,391,037 as the net value of the products. This gives Ohio a rank of seventh among the states in the value of mineral products. The principal industries were bituminous coal mining and the production of petroleum and natural gas, which reported products valued respectively at $27,353,663 and $24,244,884.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**1,876**	**57,185**	**$63,767,112**	**$33,991**	**100.0**	**100.0**	**100.0**
Individual	580	2,782	2,606,017	4,493	30.9	4.9	4.1
Firm	712	3,119	4,915,846	6,904	38.0	5.5	7.7
Corporation	563	51,202	55,763,835	99,048	30.0	89.5	87.4
Other	21	82	481,414	22,924	1.1	0.1	0.8
Petroleum and natural gas	**1,188**	**5,897**	**29,620,859**	**24,933**	**100.0**	**100.0**	**100.0**
Individual	303	309	1,275,171	4,208	25.5	5.2	4.3
Firm	578	587	3,236,242	5,599	48.7	10.0	10.9
Corporation	287	4,919	24,638,448	85,848	24.2	83.4	83.2
Other	20	82	471,098	23,555	1.7	1.4	1.6
Bituminous coal	**441**	**44,405**	**27,353,663**	**62,026**	**100.0**	**100.0**	**100.0**
Individual	171	1,688	927,886	5,426	38.8	3.8	3.4
Firm	81	1,587	1,023,073	12,631	18.4	3.6	3.7
Corporation	189	41,130	25,402,704	134,406	42.9	92.6	92.9

Table 2

	Incorporated.	Unincorporated.
Number of operators	563	1,313
Number of mines and quarries	489	475
Number of wells	20,940	14,127
Proprietors and firm members, total		3,064
Number performing manual labor		571
Salaried employees:		
Officers of corporations	448	
Superintendents and managers	659	162
Clerks and other salaried employees	1,250	106
Wage earners, Dec. 15, 1909, or nearest representative day	51,202	5,983
Capital	$141,720,906	$19,603,623
Expenses of operation and development	48,171,472	5,681,058
Salaries—		
Officers of corporations	767,806	
Superintendents and managers	851,640	130,316
Clerks and other salaried employees	970,991	54,231
Wages	24,225,059	2,544,170
Royalties and rent of mines	2,895,449	771,933
Taxes	789,460	67,306
Supplies and miscellaneous expenses	12,295,200	2,112,894
Cost of natural gas purchased and resold	5,375,867	208
Value of products	55,763,835	8,003,277

Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 1,876 operators, 563, or 30 per cent, were corporations. These corporations reported 87.4 per cent of the total value of products and employed 89.5 per cent of all wage earners.

Size of enterprises.—In Table 3 the producing enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. For all enterprises combined the average number of persons employed per enterprise was 42, while for those engaged in the production of bituminous coal the corresponding average was 89. In this industry four-fifths of all the wage earners were employed in 99 enterprises employing over 100 wage earners each.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**1,943**	**100.0**	**57,185**	**100.0**
No wage earners	97	5.0		
Contract work and part-time employees	571	29.4		
1 to 5	652	33.6	1,464	2.6
6 to 20	302	15.5	3,175	5.6
21 to 50	118	6.1	3,956	6.9
51 to 100	85	4.4	6,121	10.7
101 to 500	94	4.8	18,699	32.7
501 to 1,000	19	1.0	12,851	22.5
Over 1,000	5	0.3	10,919	19.1
Petroleum and natural gas	**1,195**	**100.0**	**5,897**	**100.0**
No wage earners	90	7.5		
Contract work and part-time employees	567	47.4		
1 to 5	441	36.9	764	13.0
6 to 20	75	6.3	713	12.1
21 to 50	9	0.8	280	4.7
51 to 100	6	0.5	469	8.0
101 to 500	4	0.3	1,179	20.0
Over 500	3	0.3	2,492	42.3
Bituminous coal	**501**	**100.0**	**44,405**	**100.0**
No wage earners	4	0.8		
Contract work	2	0.4		
1 to 5	130	25.9	455	1.0
6 to 20	137	27.3	1,401	3.2
21 to 50	61	12.2	2,192	4.9
51 to 100	68	13.6	4,842	10.9
101 to 500	79	15.8	15,156	34.1
501 to 1,000	16	3.2	10,699	24.1
Over 1,000	4	0.8	9,660	21.8

Persons employed in mining.—Of the 62,874 persons employed in producing mines in 1909, 57,185 were wage earners, 2,625 were salaried employees, and 3,064 were proprietors and firm members. Of the proprietors and firm members, 571 were performing manual labor in or about the mine. Of the total number of wage earners employed, 44,405, or 77.7 per cent, were engaged in the production of coal.

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December

15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In all industries combined 85.8 per cent and in the bituminous coal mining industry 98.6 per cent of the enterprises weighted according to the number of wage earners were operated on an eight-hour-per-day basis.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 736	100.0	100.0
8 hours and under	492	66.8	85.8
9 hours	37	5.0	1.5
10 hours	204	27.7	12.0
11 hours	1	0.1	0.1
12 hours	2	0.3	0.6
Bituminous coal	495	100.0	100.0
8 hours and under	470	94.9	98.6
9 hours	16	3.2	1.2
10 hours	9	1.8	0.2

[1] Exclusive of petroleum and natural gas and of 1 sandstone quarry, for which number of hours was not reported.

Duplication between manufactures and mining.—In the grindstone, limestone, sandstone, and gypsum industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Ohio involves a duplication of $1,372,367.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 294,763, of which 292,006 was developed by engines owned by the enterprises using them, and 2,757 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Petroleum and natural gas.	Bituminous coal.	Limestone.	All other.
Primary power:					
Aggregate horsepower	**294,763**	**167,027**	**97,422**	**17,186**	**13,128**
Owned	292,006	167,027	95,704	16,897	12,378
Steam engines—					
Number	4,776	3,307	1,003	215	250
Horsepower	193,814	70,090	95,645	16,171	12,008
Gas or gasoline engines—					
Number	4,021	3,962	26	21	12
Horsepower	98,192	96,937	159	726	370
Electric motors operated by purchased current—					
Number	123	....	91	10	22
Horsepower	2,757	....	1,718	289	750
Electric motors run by current generated by enterprise using:					
Number	1,287	1	1,211	1	74
Horsepower	37,298	20	35,501	20	1,757

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and for enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$30,226,878	$25,479,977	18.6
Supplies and materials	$8,850,679	$9,836,370	−10.0
Royalties and rent of mines	$3,668,862	$4,190,544	−12.4
Contract work	[2] $2,745,089	$2,692,557	2.0
Value of products	$59,931,837	$56,340,184	6.4
Primary horsepower	298,635	204,341	46.1

[1] A minus sign (—) denotes decrease.

[2] Exclusive of the wages of part-time employees for the petroleum and natural gas industry which are included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.									Nonproducing mines, quarries and wells.[2]
		Total.	Petroleum and natural gas.	Bituminous coal.	Limestone.	Sandstone.	Grindstones.	Iron.	Clay.	All other.[1]	
Number of operators	1,885	1,876	1,188	441	144	52	8	4	36	3	9
Number of mines, quarries, and wells	36,048	36,031	35,067	640	184	65	19	4	49	3	17
Capital[3]	$161,447,679	$161,324,529	$92,923,090	$61,139,575	$4,416,060	$1,775,987	$205,318	$53,401	$251,900	$559,198	$123,150
Expenses of operation and development	**$53,921,854**	**$53,852,530**	**$21,233,439**	**$27,153,497**	**$2,711,926**	**$2,025,680**	**$214,058**	**$22,701**	**$123,483**	**$367,746**	**$69,324**
Services—											
Salaried officers of corporations, superintendents, and managers	$1,750,002	$1,749,762	$541,476	$911,606	$152,273	$91,977	$15,572	$1,320	$10,860	$24,678	$240
Clerks and other salaried employees	$1,025,222	$1,025,222	$451,240	$455,430	$46,665	$45,118	$5,373	...	$1,600	$19,796	...
Wage earners	$26,771,442	$26,769,229	$3,145,607	$20,922,039	$1,397,390	$984,903	$107,744	$11,510	$82,510	$117,526	$2,213
Miscellaneous—											
Supplies	$7,380,294	$7,360,280	$4,009,599	$2,292,815	$537,917	$402,481	$27,988	$3,225	$9,031	$77,224	$20,014
Cost of natural gas purchased and resold	$5,376,075	$5,376,075	$5,376,075	...	...	...	...	...	...	...	...
Fuel and rent of power	$892,714	$892,671	$137,790	$388,466	$191,262	$111,816	$10,136	...	$2,373	$50,828	$43
Royalties and rent of mines	$3,676,765	$3,667,382	$2,674,350	$892,398	$60,178	$5,797	$3,148	$176	$5,035	$26,300	$9,383
Taxes	$856,871	$856,766	$585,542	$234,021	$24,276	$6,764	$1,809	$389	$1,257	$2,708	$105
Contract work	$3,005,917	$2,970,544	$2,879,315	$52,854	$4,454	$1,339	$25,597	$5,254	$1,731	...	$35,373
Rent of offices and other sundry expenses	$3,186,552	$3,184,599	$1,432,445	$1,003,868	$297,511	$375,485	$16,691	$827	$9,086	$48,686	$1,953
Value of products	**$63,767,112**	**$63,767,112**	**$29,620,959**	**$27,353,663**	**$3,363,149**	**$2,398,306**	**$278,831**	**$24,419**	**$164,102**	**$563,663**	...
Persons engaged in industry	**62,902**	**62,674**	**9,312**	**46,046**	**4,110**	**2,441**	**314**	**39**	**284**	**326**	**28**
Proprietors and officials	4,341	4,333	2,863	993	285	108	12	3	57	12	8
Proprietors and firm members	3,069	3,064	2,408	421	146	36	3	2	48	...	5
Number performing manual labor	571	571	281	203	54	13	1	1	18	...	...
Salaried officers of corporations	449	448	165	200	47	28	3	...	2	3	1
Superintendents and managers	823	821	290	372	92	44	6	1	7	9	2
Clerks and other salaried employees	1,356	1,356	552	648	79	50	6	...	4	17	...
Wage earners, Dec. 15, 1909, or nearest representative day	57,205	57,185	5,897	44,405	3,746	2,283	296	36	223	299	20
Above ground	16,794	16,779	5,897	4,083	3,746	2,283	296	19	156	299	15
Below ground	40,411	40,406	...	40,322	...	...	...	17	67	...	5
Men 16 years of age and over	56,988	56,968	5,895	44,211	3,739	2,269	296	36	223	299	20
Engineers, firemen, mechanics, etc	5,918	5,914	3,263	1,946	356	309	28	1	11	...	4
Above ground	5,662	5,658	3,263	1,690	356	309	28	1	11	...	4
Below ground	256	256	...	256	...	...	...	...	...	...	...
Miners, miners' helpers, quarrymen, and stonecutters	37,531	37,526	...	33,155	2,480	1,527	225	26	110	3	5
Above ground	4,287	4,287	...	...	2,480	1,527	225	9	43	3	...
Below ground	33,244	33,239	...	33,155	...	...	...	17	67	...	5
All other employees	13,539	13,528	2,632	9,110	903	433	43	9	102	296	11
Above ground	6,812	6,801	2,632	2,383	903	433	43	9	102	296	11
Below ground	6,727	6,727	...	6,727	...	...	...	...	...	...	...
Boys under 16 years of age[4]	217	217	2	194	7	14	...	...	...	...	...
Number of wage earners employed on the 15th day of each month:											
January	48,085	48,085	4,827	40,463	1,040	1,251	247	26	105	126	...
February	47,900	47,900	4,589	40,405	1,096	1,297	243	27	102	141	...
March	48,330	48,330	4,731	39,375	1,784	1,880	288	33	108	131	...
April	47,429	47,427	4,927	36,910	2,565	2,402	293	34	170	126	2
May	47,960	47,958	5,110	36,684	2,996	2,498	323	34	191	122	2
June	48,861	48,860	5,207	37,235	3,238	2,523	320	31	194	112	1
July	49,768	49,767	5,378	37,680	3,520	2,515	315	31	196	132	1
August	51,699	51,695	5,663	39,281	3,567	2,509	310	31	191	143	4
September	52,974	52,970	5,730	40,418	3,754	2,392	301	35	205	135	4
October	53,294	53,290	5,859	40,784	3,740	2,208	331	33	208	127	4
November	56,413	56,405	6,303	43,770	3,321	2,352	315	31	182	131	8
December	54,142	54,122	5,865	43,126	2,562	1,942	294	31	173	129	20
Land controlled, acres	**2,142,730**	**2,135,777**	**1,651,076**	**432,204**	**34,036**	**7,789**	**1,195**	**4,390**	**5,057**	**30**	**6,953**
Owned	355,300	354,835	28,658	283,439	28,893	7,401	487	4,310	1,647	...	465
Held under lease	1,787,430	1,780,942	1,622,418	148,765	5,143	388	708	80	3,410	30	6,488
Mineral and oil land	2,091,920	2,084,967	1,651,076	406,336	12,852	6,916	1,054	4,390	2,313	30	6,953
Owned	310,383	309,918	28,658	260,423	8,750	6,528	346	4,310	903	...	465
Held under lease	1,781,537	1,775,049	1,622,418	145,913	4,102	388	708	80	1,410	30	6,488
Timber land	14,253	14,253	...	5,767	6,823	20	...	...	1,643	...	...
Other land	36,557	36,557	...	20,101	14,361	853	141	...	1,101	...	...
Primary horsepower	**294,813**	**294,763**	**167,027**	**97,422**	**17,166**	**9,616**	**1,163**	...	**1,037**	**1,312**	**50**

---

[1] Includes operators as follows: Gypsum, 2; oilstones, 1.

[2] Includes operators as follows: Bituminous coal, 2; petroleum and natural gas, 7.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In the bituminous coal industry 184 boys were employed below ground.

OKLAHOMA.

Summary.—The total gross value of the products of the mining industry in Oklahoma in 1909 amounted to $25,637,892. Deducting from this amount $130,587, the value of natural gas produced by some operators and sold to others who sold it again, leaves $25,507,305 as the net value of the products. Of this amount, petroleum and natural gas contributed $17,554,505, or 68.8 per cent. Bituminous coal mining, with products valued at $6,185,078, was second in importance. In this industry the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 864 operators, 565, or 65.4 per cent, were corporations. These corporations reported 83.6 per cent of the total value of products and employed 87.7 per cent of all wage earners. Of the total value of the products of bituminous coal mines, 95.3 per cent was reported by corporations.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	864	13,920	$25,637,892	$29,673	100.0	100.0	100.0
Individual	118	756	1,451,138	12,298	13.7	5.4	5.7
Firm	162	836	2,101,037	12,969	18.8	6.0	8.2
Corporation	565	12,208	21,442,813	37,952	65.4	87.7	83.6
Other	19	120	642,904	33,837	2.2	0.9	2.5
Petroleum and natural gas	711	3,066	17,685,092	24,874	100.0	100.0	100.0
Individual	85	220	1,165,510	13.712	12.0	7.2	6.6
Firm	131	256	1,614,074	12,321	18.4	8.3	9.1
Corporation	476	2,470	14,262,604	29,963	66.9	80.6	80.6
Other	19	120	642,904	33,837	2.7	3.9	3.6
Bituminous coal	56	8,814	6,185,078	110,448	100.0	100.0	100.0
Individual	7	151	93,470	13,353	12.5	1.7	1.5
Firm	10	317	198,983	19,898	17.9	3.6	3.2
Corporation	39	8,346	5,892,625	151,093	69.6	94.7	95.3

Size of enterprises.—In Table 3 the producing enterprises are classified according to the number of wage earners employed per enterprise or operating unit. Only 27 out of a total of 872 enterprises reported over 100 wage earners each. These enterprises, however, employed three-fifths of all wage earners. In the bituminous coal mining industry 5 enterprises, employing over 500 wage earners each, reported 46.2 per cent of the total number of wage earners engaged in that industry.

Table 2

	Incorporated.	Unincorporated.
Number of operators	565	299
Number of mines and quarries	136	76
Number of wells	8,415	3,698
Proprietors and firm members, total	....	648
Number performing manual labor	....	89
Salaried employees:		
Officers of corporations	231	....
Superintendents and managers	354	116
Clerks and other salaried employees	484	89
Wage earners, Dec. 15, 1909, or nearest representative day	12,208	1,712
Capital	$60,482,889	$10,213,622
Expenses of operation and development	17,640,121	3,431,488
Salaries—		
Officers of corporations	337,072	....
Superintendents and managers	491,632	144,125
Clerks and other salaried employees	326,244	43,484
Wages	6,887,178	888,235
Royalties and rent of mines	2,174,233	609,742
Taxes	262,601	45,615
Supplies and miscellaneous expenses	7,030,574	1,700,287
Cost of natural gas purchased and resold	130,587	....
Value of products	21,442,813	4,195,079

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	872	100.0	13,920	100.0
No wage earners	19	2.2	....	....
Contract work and part-time employees	132	15.1	....	....
1 to 5	485	55.6	970	7.0
6 to 20	135	15.5	1,468	10.6
21 to 50	52	6.0	1,672	12.0
51 to 100	22	2.5	1,465	10.5
101 to 500	22	2.5	4,273	30.7
Over 500	5	0.6	4,072	29.3
Petroleum and natural gas	711	100.0	3,066	100.0
No wage earners	14	2.0	....	....
Contract work and part-time employees	132	18.6	....	....
1 to 5	456	64.1	881	28.7
6 to 20	86	12.1	840	27.4
21 to 50	18	2.5	515	16.8
Over 50	5	0.7	830	27.1
Bituminous coal	64	100.0	8,814	100.0
1 to 20	20	31.3	219	2.6
21 to 50	10	15.6	324	3.7
51 to 100	13	20.3	933	10.6
101 to 500	16	25.0	3,266	37.1
Over 500	5	7.8	4,072	46.2

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined, in 86.9 per cent of the enterprises, weighted according to the number of wage earners, a day of eight hours or less prevailed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries[1]	156	100.0	100.0
8 hours and under	108	69.2	86.9
9 hours	8	5.1	0.4
10 hours	37	23.7	12.1
12 hours	3	1.9	0.6
Bituminous coal	64	100.0	100.0
8 hours and under	59	92.2	98.2
10 hours	5	7.8	1.8

[1] Exclusive of petroleum and natural gas.

Duplication between manufactures and mining.—In the production of granite and gypsum some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Oklahoma involves a duplication of $433,019.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown by Table 5, was 95,074, of which 94,634 was developed by engines owned by the enterprises using them and 440 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Petroleum and natural gas.	Bituminous coal.	Lead and zinc.	All other.
Primary power:					
Aggregate horsepower	95,074	60,496	26,316	4,521	3,741
Owned	94,634	60,496	25,881	4,516	3,741
Steam engines—					
Number	2,280	1,818	277	129	56
Horsepower	69,089	35,022	25,881	4,516	3,670
Gas or gasoline engines—					
Number	1,294	1,289			5
Horsepower	25,545	25,474			71
Electric motors operated by purchased current—					
Number	10		9	1	
Horsepower	440		435	6	
Electric motors run by current generated by enterprise using:					
Number	33		31	1	1
Horsepower	1,722		1,700	20	2

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines, and to combine for 1902 the data for Oklahoma and Indian Territory, shown separately by the report for that year.

The great growth of the mining industry from 1902 to 1909 was due to the development of the petroleum and natural gas fields, the increase in the value of products of this industry amounting to over $17,300,000. Other notable increases occurred in the production of bituminous coal, lead and zinc, limestone, and gypsum.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902[1]	Per cent of increase.
Wages and salaries	$9,117,970	$3,513,261	159.5
Supplies and materials	$5,281,362	$360,997	1,363.0
Royalties and rent of mines	$2,783,975	$260,701	967.9
Contract work	[2] $2,071,311	$78,639	2,533.9
Value of products	$25,506,647	$4,508,086	465.8
Primary horsepower	95,074	13,583	599.9

[1] Includes statistics for the production of lime, which are omitted from the figures for 1909.

[2] Exclusive of amount paid to miners compensated by a share of the product, and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.									Nonproducing mines, quarries, and wells.[2]
		Total.	Petroleum and natural gas.	Bituminous coal.	Lead and zinc.	Limestone.	Granite.	Sandstone.	Gypsum.[1]	Asphaltum and bituminous rock.	
Number of operators	880	864	711	56	47	17	6	12	11	4	16
Number of mines, quarries, and wells	12,352	12,325	12,113	104	50	20	6	14	12	6	27
Capital[3]	$70,912,464	$70,696,411	$62,739,176	$5,672,886	$602,648	$210,438	$108,600	$24,935	$1,105,714	$232,114	$216,053
Expenses of operation and development	$21,156,030	$21,071,609	$12,950,891	$6,535,441	$663,818	$379,663	$59,957	$40,292	$401,720	$39,827	$84,421
Services—											
Salaried officers of corporations, superintendents, and managers	$974,264	$972,829	$707,663	$187,087	$32,143	$9,552	$5,500	$1,200	$21,984	$7,700	$1,435
Clerks and other salaried employees	$369,828	$369,728	$221,155	$115,243	$1,744	$6,995	$1,400	....	$21,691	$1,500	$100
Wage earners	$7,790,011	$7,775,413	$2,274,667	$4,803,392	$218,136	$215,282	$37,884	$29,496	$175,437	$21,119	$14,598
Miscellaneous—											
Supplies	$4,930,408	$4,897,176	$3,894,782	$745,984	$112,526	$58,302	$7,338	$6,146	$69,944	$2,154	$33,232
Cost of natural gas purchased and resold	$130,587	$130,587	$130,587	....	....	....	....	....	....	....	....
Fuel and rent of power	$385,645	$384,186	$57,718	$166,630	$81,615	$20,288	$4,010	$1,370	$52,244	$411	$1,459
Royalties and rent of mines	$2,786,500	$2,783,975	$2,331,198	$269,651	$176,647	$2,549	$30	$1,281	$1,282	$1,337	$2,525
Taxes	$308,497	$308,216	$261,631	$36,589	$3,100	$1,151	$455	$151	$4,592	$547	$281
Contract work	$2,165,717	$2,137,314	$2,103,273	$22,266	$10,230	....	....	....	....	$1,545	$28,403
Rent of offices and sundry expenses	$1,314,573	$1,312,185	$968,217	$188,599	$27,777	$65,544	$3,340	$848	$54,546	$3,514	$2,388
Value of products	$25,637,892	$25,637,892	$17,685,092	$6,185,078	$695,236	$487,883	$60,289	$59,456	$417,694	$47,266	....
Persons engaged in industry	15,924	15,842	4,439	9,124	842	745	131	97	418	46	82
Proprietors and officials	1,378	1,349	1,013	143	113	27	13	14	22	4	29
Proprietors and firm members	672	648	499	35	80	11	9	13	1	....	24
Number performing manual labor	93	89	23	22	33	2	....	8	1	....	4
Salaried officers of corporations	232	231	177	39	4	2	2	....	7	....	1
Superintendents and managers	474	470	337	69	29	14	2	1	14	4	4
Clerks and other salaried employees	575	573	360	167	5	14	2	....	22	3	2
Wage earners, Dec. 15, 1909, or nearest representative day	13,971	13,920	3,066	8,814	724	704	116	83	374	39	51
Above ground	6,215	6,175	3,066	1,516	296	704	116	83	370	24	40
Below ground	7,756	7,745	....	7,298	428	....	....	....	4	15	11
Men 16 years of age and over	13,968	13,917	3,066	8,811	724	704	116	83	374	39	51
Engineers, firemen, mechanics, etc	3,423	3,389	2,336	790	186	57	12	2	1	5	34
Above ground	3,291	3,259	2,336	666	180	57	12	2	1	5	32
Below ground	132	130	....	124	6	....	....	....	....	....	2
Miners, miners' helpers, quarrymen, and stonecutters	6,677	6,668	....	5,414	395	602	71	75	79	32	9
Above ground	854	854	....	....	12	602	71	75	75	19	....
Below ground	5,823	5,814	....	5,414	383	....	....	....	4	13	9
All other employees	3,868	3,860	730	2,607	143	45	33	6	294	2	8
Above ground	2,070	2,062	730	850	104	45	33	6	294	....	8
Below ground	1,798	1,798	....	1,757	39	....	....	....	....	2	....
Boys under 16 years of age (all below ground)	3	3	....	3	....	....	....	....	....	....	....
Number of wage earners employed on the 15th day of each month:											
January	11,481	11,463	2,737	7,545	281	538	35	17	281	29	18
February	11,153	11,140	2,760	7,274	254	489	34	17	283	29	13
March	10,739	10,722	2,806	6,676	257	590	38	17	309	29	17
April	10,446	10,434	2,772	6,451	288	514	50	24	306	29	12
May	10,507	10,495	2,774	6,377	348	542	46	24	346	38	12
June	10,818	10,799	2,864	6,621	347	473	48	82	327	37	19
July	11,484	11,469	2,880	7,296	328	475	59	82	312	37	15
August	11,727	11,705	2,851	7,543	337	496	67	84	300	37	22
September	12,277	12,258	2,947	7,794	475	486	105	79	335	37	19
October	12,953	12,935	3,007	8,373	438	544	104	76	356	37	18
November	13,084	13,049	2,929	8,544	449	603	102	76	309	37	35
December	13,462	13,426	3,059	8,720	459	648	106	75	322	37	36
Land controlled, acres	1,232,320	1,211,893	1,119,238	82,504	715	2,091	930	391	3,160	2,864	20,427
Owned	23,172	22,672	17,529	910	30	1,640	690	83	1,700	90	500
Held under lease	1,209,148	1,189,221	1,101,709	81,594	685	451	240	308	1,460	2,774	19,927
Mineral and oil land	1,225,446	1,205,019	1,119,238	75,744	715	1,991	930	391	3,160	2,850	20,427
Owned	23,072	22,572	17,529	910	30	1,540	690	83	1,700	90	500
Held under lease	1,202,374	1,182,447	1,101,709	74,834	685	451	240	308	1,460	2,760	19,927
Timber land	6,820	6,820	....	6,720	....	100	....	....	....	....	....
Other land	54	54	....	40	....	....	....	....	....	14	....
Primary horsepower	95,439	95,074	60,496	26,316	4,621	1,417	330	80	1,661	243	365

---

[1] Includes 1 operator engaged in the production of chromite.

[2] Includes operators as follows: Lead and zinc, 4; petroleum and natural gas, 11; placer gold, 1.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

OREGON.

Summary.—The total value of the products of all mines and quarries in Oregon in 1909 amounted to $1,191,512. Of this amount, gold and silver deep mines and placer gold mines contributed products valued respectively at $468,732 and $159,002, a total of $627,734. Bituminous coal mining, the industry next in importance, reported products valued at $225,026. In the operations of gold and silver deep mines and bituminous coal mines the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work, resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 116 operators, 45, or 38.8 per cent, were corporations. These corporations reported 69.8 per cent of the total value of products and employed 70 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	118	1,087	$1,131,612	$10,272	100.0	100.0	100.0
Individual	43	194	192,828	4,484	37.1	17.8	16.2
Firm	28	132	166,643	5,952	24.1	12.1	14.0
Corporation	45	761	832,041	18,490	38.8	70.0	69.8
Gold and silver, deep mines	32	436	468,732	14,648	100.0	100.0	100.0
Individual	5	66	111,245	22,249	15.6	15.1	23.7
Firm	5	32	15,214	3,043	15.6	7.3	3.2
Corporation	22	338	342,273	15,558	68.8	77.5	73.0
Placer gold	80	177	159,002	2,650	100.0	100.0	100.0
Individual	31	70	57,270	1,847	51.7	39.5	36.0
Firm	17	25	41,522	2,442	28.3	14.1	26.1
Corporation	12	82	60,210	5,018	20.0	46.3	37.9
Bituminous coal	8	251	225,026	28,128	100.0	100.0	100.0
Firm[1]	4	37	25,532	6,383	50.0	14.7	11.3
Corporation	4	214	199,494	49,873	50.0	85.3	88.7

[1] Includes 2 individuals.

Size of enterprises.—In Table 3 the producing enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 1,087 wage earners employed in all enterprises, 366, or 33.7 per cent, were reported by the 5 enterprises employing over 50 wage earners each.

Table 2	Incorporated.	Unincorporated.
Number of operators	45	71
Number of mines and quarries	81	80
Proprietors and firm members, total	....	112
Number performing manual labor	....	86
Salaried employees:		
Officers of corporations	17	....
Superintendents and managers	37	8
Clerks and other salaried employees	31	7
Wage earners, Dec. 15, 1909, or nearest representative day	761	326
Capital	$8,211,089	$956,745
Expenses of operation and development	897,748	325,720
Salaries—		
Officers of corporations	17,385	....
Superintendents and managers	58,002	16,000
Clerks and other salaried employees	27,236	6,210
Wages	528,638	176,554
Royalties and rent of mines	11,987	4,948
Taxes	8,376	4,541
Supplies and miscellaneous expenses	246,124	117,467
Value of products	832,041	359,471

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	117	100.0	1,087	100.0
No wage earners	16	13.7	....	....
Contract work	4	3.4	....	....
1 to 5	54	46.2	137	12.6
6 to 20	31	26.5	341	31.4
21 to 50	7	6.0	243	22.4
Over 50	5	4.3	366	33.7
Gold and silver, deep mines	32	100.0	436	100.0
Contract work	3	9.4	....	....
1 to 5	11	34.4	36	8.3
6 to 20	11	34.4	140	32.1
Over 20	7	21.9	260	59.6
Placer gold	60	100.0	177	100.0
No wage earners	16	26.7	....	....
Contract work	1	1.7	....	....
1 to 5	35	58.3	80	45.2
Over 6	8	13.3	97	54.8

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work, are classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. For all industries combined 55.8 per cent of the enterprises weighted according to the number of wage earners were operated on an eight-hour-per-day basis. For enterprises engaged in the production of gold and silver (deep mines) the corresponding percentage was 98.6.

Table 4	PRODUCING ENTERPRISES: 1909		
INDUSTRY AND HOURS PER DAY.	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	97	100.0	100.0
8 hours	56	57.7	55.8
9 hours	8	8.2	3.2
10 hours	29	29.9	37.0
11 hours	1	1.0	3.4
12 hours	3	3.1	0.6
Gold and silver, deep mines	29	100.0	100.0
8 hours	27	93.1	98.6
10 hours	1	3.4	1.1
12 hours	1	3.4	0.2
Placer gold	43	100.0	100.0
8 hours	19	44.2	30.5
9 hours	3	7.0	4.0
10 hours	18	41.9	41.8
11 hours	1	2.3	20.9
12 hours	2	4.7	2.8
Bituminous coal	9	100.0	100.0
8 hours	7	77.8	45.0
9 hours	1	11.1	1.2
10 hours	1	11.1	53.8

Duplication between manufactures and mining.—In the production of granite and gypsum some of the operators subjected the product obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Oregon involves a duplication of $202,664.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enprises was 8,070, of which 6,177 was developed by engines and water wheels owned by the enterprise using them and 1,893 by electric motors operated by purchased current.

Table 5	PRODUCING ENTERPRISES: 1909				
CHARACTER OF POWER.	Total.	Gold and silver, deep mines.	Placer gold.	Bituminous coal.	All other.
Primary power:					
Aggregate horsepower	8,070	4,497	1,110	1,109	1,354
Owned	6,177	3,217	970	1,109	881
Steam engines—					
Number	52	21	3	15	13
Horsepower	2,974	899	103	1,109	863
Gas or gasoline engines—					
Number	3	3			
Horsepower	48	48			
Water wheels—					
Number	35	28	6		1
Horsepower	3,155	2,270	867		18
Electric motors operated by purchased current—					
Number	40	23	6		11
Horsepower	1,893	1,280	140		473
Electric motors run by current generated by enterprise using:					
Number	18	7	1	9	1
Horsepower	1,366	1,160	1	200	5

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6	PRODUCING ENTERPRISES.		
	1909	**1902**	Per cent of increase.[1]
Wages and salaries	$854,979	$1,222,178	−30.0
Supplies and materials	$296,489	$408,112	−27.4
Royalties and rent of mines	$16,935	$60,499	−72.0
Contract work	[2] $3,240	$19,522	−83.4
Value of products	$1,237,292	$2,087,389	−40.7
Primary horsepower	8,070	3,761	114.6

[1] A minus sign (−) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.							NONPRODUCING MINES, QUARRIES, AND WELLS.		
		Total.	Gold and silver, deep mines.	Placer gold.	Bituminous coal.	Granite.	Trap-rock.	All other.[1]	Total.	Gold and silver, deep mines.	All other.[2]
Number of operators	235	116	32	60	8	8	4	4	119	110	9
Number of mines, quarries, and wells	457	161	58	71	9	8	11	4	296	280	16
Capital	$20,526,593	$9,166,834	$7,070,156	$1,006,290	$642,410	$190,457	$38,931	$218,590	$11,359,759	$10,916,247	$443,512
Expenses of operation and development	**$1,776,206**	**$1,223,468**	**$579,724**	**$120,797**	**$238,246**	**$130,683**	**$78,476**	**$75,542**	**$552,738**	**$530,053**	**$22,685**
Services—											
Salaried officers of corporations, superintendents, and managers	$144,136	$91,387	$49,892	$13,115	$6,050	$8,830	$8,100	$5,400	$52,749	$49,109	$3,640
Clerks and other salaried employees	$42,056	$33,446	$18,932	$300	$5,664	$5,100	$1,440	$2,010	$8,610	$8,610	...
Wage earners	$994,596	$705,192	$327,362	$74,669	$152,845	$65,321	$50,817	$34,178	$289,404	$279,016	$10,388
Miscellaneous—											
Supplies	$325,135	$186,796	$114,054	$17,318	$19,523	$15,841	$8,681	$11,379	$138,339	$131,412	$6,927
Fuel and rent of power	$115,336	$96,592	$30,306	$978	$43,067	$6,292	$4,105	$11,844	$18,744	$18,744	...
Royalties and rent of mines	$17,435	$16,935	$2,332	$2,467	$438	$9,270	$2,388	$40	$500	$500	...
Taxes	$16,160	$12,917	$4,027	$3,238	$2,642	$2,029	$656	$325	$3,243	$2,680	$563
Contract work	$20,924	$7,717	$4,127	$1,590	$2,000	...	...	...	$13,207	$13,207	...
Rent of offices and other sundry expenses	$100,428	$72,486	$28,692	$7,122	$6,017	$18,000	$2,289	$10,366	$27,942	$26,775	$1,167
Value of products	**$1,191,512**	**$1,191,512**	**$468,732**	**$159,002**	**$225,028**	**$152,221**	**$91,974**	**$94,557**	...	...	...
Persons engaged in industry	**1,990**	**1,299**	**505**	**260**	**271**	**129**	**57**	**77**	**691**	**654**	**37**
Proprietors and officials	326	174	49	83	14	14	5	9	152	142	10
Proprietors and firm members	215	112	17	72	9	6	1	7	103	96	7
Number performing manual labor	110	66	7	49	9	...	...	1	44	40	4
Salaried officers of corporations	33	17	11	...	1	4	1	...	16	15	1
Superintendents and managers	78	45	21	11	4	4	3	2	33	31	2
Clerks and other salaried employees	49	38	20	...	6	7	2	3	11	11	...
Wage earners, Dec. 15, 1909, or nearest representative day (all 16 years of age and over)	1,615	1,087	436	177	251	108	50	65	528	501	27
Above ground	772	593	157	173	40	108	50	65	179	152	27
Below ground	843	494	279	4	211	...	...	...	349	349	...
Engineers, firemen, mechanics, etc	233	157	97	6	28	20	6	...	76	69	7
Above ground	207	133	88	6	13	20	6	...	74	67	7
Below ground	26	24	9	...	15	...	...	...	2	2	...
Miners, miners' helpers, and quarrymen	1,133	756	285	166	196	39	39	31	377	369	8
Above ground	322	286	15	162	...	39	39	31	36	28	8
Below ground	811	470	270	4	196	...	...	...	341	341	...
All other employees	249	174	54	5	27	49	5	34	75	63	12
Above ground	243	174	54	5	27	49	5	34	69	57	12
Below ground	6	...	...	...	...	...	...	...	6	6	...
Number of wage earners employed on the 15th day of each month:											
January	981	791	267	141	258	58	25	42	190	186	4
February	1,025	846	292	136	270	71	28	48	180	176	4
March	1,111	900	317	139	245	113	29	57	211	202	9
April	1,058	853	331	126	199	116	33	48	205	195	10
May	1,114	868	313	109	171	158	65	52	246	239	7
June	1,087	779	312	93	121	110	94	49	308	289	19
July	1,062	726	310	51	112	107	79	67	336	319	17
August	1,133	778	346	42	141	95	79	75	355	338	17
September	1,270	892	350	75	178	141	87	61	378	365	13
October	1,380	982	403	90	229	134	79	47	398	376	22
November	1,366	981	423	118	212	119	54	55	385	363	22
December	1,304	920	366	137	235	84	43	55	384	379	5
Land controlled, acres	**61,058**	**33,708**	**8,509**	**18,015**	**6,630**	**440**	**48**	**66**	**27,350**	**20,649**	**6,701**
Owned	53,622	27,607	6,818	15,324	4,960	410	34	61	26,015	19,691	6,324
Held under lease	7,436	6,101	1,691	2,691	1,670	30	14	5	1,335	958	377
Mineral and oil land	46,218	22,638	6,293	12,696	3,122	440	21	66	23,580	16,883	6,697
Owned	39,382	17,137	4,602	10,605	1,452	410	7	61	22,245	15,925	6,320
Held under lease	6,836	5,501	1,691	2,091	1,670	30	14	5	1,335	958	377
Timber land	7,168	5,625	2,045	670	2,910	...	...	...	1,543	1,543	...
Other land	7,672	5,445	171	4,649	598	...	27	...	2,227	2,223	4
Primary horsepower	**12,614**	**8,070**	**4,497**	**1,110**	**1,109**	**658**	**553**	**143**	**4,544**	**2,113**	**2,431**

[1] Includes operators as follows: Gypsum, 1; marble, 1; sandstone, 2.
[2] Includes operators as follows: Petroleum and natural gas, 1; placer gold, 8.

PENNSYLVANIA.

Summary.—Pennsylvania holds the first place among the mining states. In 1909 its producing mining industries gave employment to 405,685 persons, or more than one-third of all persons employed in all mining enterprises in the United States. The gross value of the mining products of Pennsylvania in that year was $349,059,786. Deducting from this amount $3,099,183, the cost of bituminous coal sold by some operators and used as material by others, and the value of the natural gas purchased and resold, leaves a net value of products of $345,960,603, which constituted over one-fourth of the total for the United States. The expenses of operation and development were reported as $300,977,955, the principal elements of which were: Salaries and wages, $210,531,202; supplies and materials (including fuel and rent of power), $54,697,444; royalties and rent of mines, $15,379,127.

The principal industry of the state was coal mining, which gave employment to 357,671 wage earners, of whom nearly half were in the anthracite mines. Pennsylvania is practically the sole producer of anthracite coal. The net value of the combined product of anthracite and bituminous coal in 1909 was $296,396,507, of which $148,957,894 represented the value of anthracite and $147,438,613 that of bituminous coal. Of the latter amount, $103,287,875 represented the value of coal sold as such, $43,937,062 the value of coke made at the mines, and $213,676 the value of other products. The net value of the products of petroleum and natural gas wells was $36,126,096, which, together with the value of coal, constituted 96.1 per cent of the total net value of mining products in the state.

In the production of traprock and marble the expenses of operation and development exceeded the value of the products. This was due, in part, to unprofitable mining ventures and, in part, to expenditures for development work resulting in permanent improvements to the mining properties.

Of the total expenses of operation and development of producing mines, quarries, and wells, exclusive of the cost of purchased coal and natural gas, in Pennsylvania in 1909 ($297,878,772), 70.7 per cent represented salaries and wages; 17.3 per cent supplies, materials, fuel, and rent of power; 5.2 per cent royalties and rent of mines; 2 per cent contract work; 1.9 per cent taxes; and 2.9 per cent rent of offices and other miscellaneous expenses. The distribution of the different elements of expenses in the anthracite mines is not widely different from that in the bituminous mines, and the expenses for these two classes combined substantially determine the total for all mining industries. The distribution of the expenses in the petroleum and natural gas industry is quite different from that in the coal mining industry, the proportion for salaries and wages being much lower, namely, 28.3 per cent of the total expenses (exclusive of the cost of purchased gas), whereas the proportion for contract work is much higher, namely, 17.4 per cent.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**4,851**	**384,833**	**$349,059,786**	**$71,956**	**100.0**	**100.0**	**100.0**
Individual	2,003	10,843	9,824,888	4,905	41.3	2.8	2.8
Firm	1,966	20,310	20,260,914	10,306	40.5	5.3	5.8
Corporation	830	348,760	311,850,234	375,723	17.1	90.6	89.3
Other	52	4,920	7,123,750	136,995	1.1	1.3	2.0
Anthracite coal	**189**	**173,263**	**148,957,894**	**788,137**	**100.0**	**100.0**	**100.0**
Individual	37	308	283,018	7,649	19.6	0.2	0.2
Firm	48	7,915	6,547,823	136,413	25.4	4.6	4.4
Corporation [1]	104	165,040	142,127,053	1,366,606	55.0	95.3	95.4
Bituminous coal	**689**	**184,408**	**147,466,417**	**214,030**	**100.0**	**100.0**	**100.0**
Individual	245	6,262	4,027,827	16,440	35.6	3.4	2.7
Firm	145	7,787	5,317,263	36,671	21.0	4.2	3.6
Corporation	296	167,743	135,517,857	457,831	43.0	91.0	91.9
Other	3	2,616	2,603,470	867,823	0.4	1.4	1.8
Petroleum and natural gas	**3,030**	**7,397**	**39,197,475**	**12,936**	**100.0**	**100.0**	**100.0**
Individual	1,204	740	3,621,597	3,008	39.7	10.0	9.2
Firm	1,579	1,047	5,933,702	3,758	52.1	14.2	15.1
Corporation	207	4,591	26,581,488	128,413	6.8	62.1	67.8
Other	40	1,019	3,060,688	76,517	1.3	13.8	7.8

[1] Includes 2 estates.

Table 2

	Incorporated.	Unincorporated.
Number of operators	830	4,021
Number of mines and quarries	1,588	1,412
Number of wells	20,438	39,342
Proprietors and firm members	....	9,130
Number performing manual labor	....	2,113
Salaried employees:		
Officers of corporations	933	....
Superintendents and managers	2,836	568
Clerks and other salaried employees	6,806	589
Wage earners, Dec. 15, 1909, or nearest representative day	348,760	36,073
Capital	$764,703,344	$101,503,864
Expenses of operation and development	272,854,850	28,123,105
Salaries—		
Officers of corporations	2,483,345	....
Superintendents and managers	4,221,581	682,079
Clerks and other salaried employees	5,247,722	422,613
Wages	181,386,060	16,087,802
Royalties and rent of mines	12,814,088	2,565,039
Taxes	5,403,274	298,192
Supplies and miscellaneous expenses	58,324,038	7,944,939
Cost of coal purchased for material and natural gas purchased and resold	2,974,742	124,441
Value of products	311,850,234	37,209,552

Of the total number of operators in all industries combined, 17.1 per cent were corporations and 81.8 per cent were individuals and firms. The producing enterprises controlled by corporations employed 90.6 per cent of all wage earners, and contributed 89.3 per cent of the total value of all mining products. In anthracite coal mining more than one-half of all operators were incorporated; they employed 95.3 per cent of all wage earners and reported 95.4 per cent of the value of the products of all anthracite coal mines. In bituminous coal mining more than two-fifths of all operators were incorporated; they employed 91 per cent of all wage earners and contributed 91.9 per cent of the total value of products. In the petroleum and natural gas industry only 6.8 per cent of all operators were incorporated, but they employed 62.1 per cent of all wage earners engaged in the industry and contributed 67.8 per cent of the products of the industry.

Table 3 INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**5,256**	**100.0**	**384,833**	**100.0**
No wage earners	832	15.8		
Contract work and part-time employees	1,320	25.1		
1 to 5	1,433	27.3	2,944	0.8
6 to 20	531	10.1	5,857	1.5
21 to 50	357	6.8	11,996	3.1
51 to 100	246	4.7	18,149	4.7
101 to 500	331	6.3	78,956	20.5
501 to 1,000	134	2.5	95,395	24.8
Over 1,000	72	1.4	171,536	44.6
Anthracite coal	**359**	**100.0**	**173,263**	**100.0**
No wage earners	6	1.7		
Contract work	2	0.6		
1 to 5	40	11.1	105	0.1
6 to 20	37	10.3	434	0.3
21 to 50	31	8.6	1,003	0.6
51 to 100	30	8.4	2,211	1.3
101 to 500	75	20.9	24,042	13.9
501 to 1,000	94	26.2	66,300	38.3
Over 1,000	44	12.3	79,168	45.7
Bituminous coal	**923**	**100.0**	**184,408**	**100.0**
No wage earners	5	0.5		
Contract work	2	0.2		
1 to 5	144	15.6	468	0.3
6 to 20	182	19.7	1,994	1.1
21 to 50	149	16.1	5,257	2.9
51 to 100	157	17.0	11,589	6.3
101 to 500	221	23.9	48,428	26.3
501 to 1,000	36	3.9	25,880	14.0
Over 1,000	27	2.9	90,792	49.2
Petroleum and natural gas	**3,030**	**100.0**	**7,397**	**100.0**
No wage earners	751	24.8		
Contract work and part-time employees	1,295	42.7		
1 to 5	884	29.2	1,434	19.4
6 to 20	68	2.2	643	8.7
21 to 50	19	0.6	631	8.5
51 to 100	3	0.1	227	3.1
101 to 500	7	0.2	1,269	17.2
Over 500	3	0.1	3,193	43.2

Size of enterprises.—In Table 3 the producing enterprises are classified according to the number of wage earners employed per enterprise or operating unit. This table shows that about one-sixth of all enterprises were operated without wage earners, all the work being performed by the proprietors, and that about one-fourth were operated by contractors who furnished all necessary labor, or by men who gave only a part of their time to the enterprise. The latter two methods are most common in the petroleum and natural gas industry, where the drilling of new wells is done mostly by contract, while very little labor is required to operate the wells. Over one-fourth of all enterprises were operated with only from one to five wage earners each, and the wage earners employed in these enterprises constituted only 0.8 per cent of the total number in the mining industries. On the other hand, more than two-thirds of all wage earners were employed in 206 enterprises with more than 500 wage earners each, although these enterprises constituted only 3.9 per cent of the total number. In coal mining there were only 15 enterprises which were operated without wage earners or by contract. In this industry about five-sixths of all wage earners in anthracite mines and about five-eighths of those in bituminous mines were employed in enterprises with more than 500 wage earners each. In the petroleum and natural gas industry over two-thirds of all enterprises were operated without regular wage earners, and over one-fourth had only from one to five wage earners. On the other hand, three enterprises with over 500 wage earners each employed over 3,000 regular wage earners; that is, more than two-fifths of all the regular wage earners employed in the industry.

Persons employed in mining.—Of the 405,685 persons engaged in the producing mining industries of Pennsylvania in 1909, 13,457 were proprietors and officials, 7,395 clerks, and 384,833 wage earners (number reported December 15, 1909, or the nearest representative day). Of the wage earners, 110,346 were employed above ground and 274,487 below ground. No women were reported as employed, but there were 4,506 boys under 16 years of age.

Prevailing hours of labor.—In Table 4 all producing enterprises reporting hours of labor, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. The table shows that, while in all industries combined there are more enterprises which work 10 hours per day than any other number, yet when the size of the enterprises, weighted according to the number of wage earners, is taken into account the nine-hour day appears the most prevalent, this fact being chiefly due to the predominance of the nine-hour day in the anthracite coal industry.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 2,114	100.0	100.0
8 hours and under	627	29.7	26.5
9 hours	634	30.0	57.6
10 hours	851	40.3	15.5
12 hours	2	0.1	0.4
Anthracite coal	350	100.0	100.0
8 hours and under	12	3.4	1.7
9 hours	289	82.6	98.1
10 hours	48	13.7	0.3
12 hours	1	0.3	(2)
Bituminous coal	915	100.0	100.0
8 hours and under	587	64.2	52.5
9 hours	186	20.2	23.6
10 hours	142	15.5	23.2
12 hours	1	0.1	0.8

[1] Exclusive of petroleum and natural gas and of 1 anthracite coal mine, 1 bituminous coal mine, 2 bluestone quarries, 3 slate quarries, and 1 limestone quarry for which number of hours was not reported.

[2] Less than one-tenth of 1 per cent.

Engines and power.—Table 5 presents for all industries combined and for anthracite coal mines, bituminous coal mines, and petroleum and natural gas wells separately, detailed statistics of the engines and power employed.

About nine-tenths of the total primary power employed in Pennsylvania mining enterprises is generated by steam engines and most of the remainder by gas and gasoline engines. A considerable part of this primary power, however, is used in operating electric motors for the more direct application of power. In the bituminous coal mines the horsepower of electric motors (including those run by purchased power and by power generated by the same enterprises) was equal to more than one-fourth of the aggregate primary power. Most of the gas or gasoline engines are used in connection with petroleum and natural gas wells.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Coal.		Petroleum and natural gas.	All other.
		Anthracite.	Bituminous.		
Primary power:					
Aggregate horsepower	[1] **1,618,806**	**676,128**	**404,664**	**478,946**	[1] **59,078**
Owned	[1] 1,603,999	674,718	393,912	478,846	[1] 56,523
Steam engines—					
Number	30,388	7,567	2,993	18,706	1,122
Horsepower	1,460,514	673,946	393,371	339,194	54,003
Gas or gasoline engines—					
Number	8,180	25	60	8,062	43
Horsepower	143,452	772	541	139,652	2,487
Electric motors operated by purchased current—					
Number	412	32	308	1	71
Horsepower	14,807	1,410	10,742	100	2,555
Electric motors run by current generated by enterprise using:					
Number	4,851	1,152	3,617	42	40
Horsepower	172,310	46,088	115,195	406	10,621

[1] Includes 2 water wheels with a total of 33 horsepower.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909.

The increase in the total amount paid in wages and salaries is equal to 68.3 per cent, while the value of products shows an increase of only 46.3 per cent. It must be borne in mind that the value assigned to coal at the mine and to petroleum at the well is arbitrary in many cases, the products being either consumed by the owners or affiliated concerns or transported by such owners or affiliated concerns to markets, the division, of the ultimate value received, between the mine and the transportation system being largely a matter of form.

Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$203,684,971	$121,051,866	68.3
Supplies and materials	$51,202,196	$29,062,686	76.2
Royalties and rent of mines	$15,358,322	$10,722,810	43.2
Contract work	[1] $5,632,791	$5,598,074	0.6
Value of products	$331,376,718	$226,641,178	46.2
Primary horsepower	1,627,488	1,114,526	46.0

[1] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Pennsylvania involves a duplication of $48,301,454. Of this amount, $44,117,871 represents the value of coke and by-products of coke ovens duplicated, $3,491,558 the value of slate, and $692,025 the combined value of bluestone, granite, graphite, limestone, marble, sandstone, and traprock. The total value of all coke produced in the state, both at mines and at plants not connected with mines, as shown by the report on manufactures, was $51,816,000. Thus the value of the coke produced at mines and included in both reports represents 85.1 per cent of the total production. In the slate industry the value of the products duplicated represents substantially the entire production. Of the total value of slate produced ($3,492,026), products valued at only $468 were marketed without being subjected to some form of treatment at the quarry before marketing. Among the various forms in which the slate was marketed by the quarry operators were the following: Roofing slate, blackboards, school slates, gravestones, etc.

DETAILED STATISTICS FOR

	Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.					
			Total.	Coal.			Petroleum and natural gas.	Iron.
				Total.	Anthracite.	Bituminous.		
1	Number of operators	4,882	4,851	878	189	689	3,030	15
2	Number of mines, quarries, and wells	62,818	62,780	1,929	420	1,509	69,780	19
3	Capital	[3] $868,149,512	$866,207,208	$647,636,069	$246,713,318	$400,922,751	$161,796,479	$7,124,947
4	**Expenses of operation and development**	$301,397,276	$300,877,955	$267,271,507	$139,110,444	$128,161,063	$21,998,980	$377,583
	Services:							
5	Salaried officers of corporations, superintendents, and managers	[4] $7,404,731	[4] $7,387,005	$5,828,428	$2,311,003	$3,517,425	$748,538	$17,841
6	Clerks and other salaried employees	[4] $5,674,852	[4] $5,670,335	$4,908,980	$2,261,486	$2,647,494	$455,702	$4,408
7	Wage earners	$197,681,366	$197,473,862	$185,866,043	$92,169,906	$93,696,137	$4,144,712	$167,033
	Miscellaneous:							
8	Supplies	$45,268,642	$45,175,071	$38,459,551	$23,472,809	$14,986,742	$5,032,525	$87,340
9	Cost of coal purchased for material and natural gas purchased and resold.	$3,099,183	$3,099,183	$27,804	....	$27,804	$3,071,379	....
10	Fuel and rent of power	$6,426,867	$6,423,190	$5,491,958	$3,189,279	$2,302,679	$399,027	$23,460
11	Royalties and rent of mines	$15,385,640	$15,379,127	$11,966,353	$7,969,785	$3,996,568	$2,934,063	$3,084
12	Taxes	[4] $5,707,325	[4] $5,699,466	$5,022,428	$2,677,853	$2,344,575	$521,436	$19,415
13	Contract work	[4] $6,010,603	[4] $5,976,032	$2,488,677	$1,701,514	$787,163	$3,297,185	$50,994
14	Rent of offices and other sundry expenses	[4] $8,738,066	[4] $8,694,684	$7,211,285	$3,356,809	$3,854,476	$1,394,413	$4,008
15	**Value of products**	$349,059,786	$349,059,786	$296,424,311	$148,957,894	$147,466,417	$39,197,475	$789,298
16	**Persons engaged in industry**	[5] 406,274	[5] 405,685	368,355	177,753	190,602	15,451	764
17	Proprietors and officials	[5] 13,574	[5] 13,457	4,306	1,310	2,996	7,515	28
18	Proprietors and firm members	9,234	9,130	996	188	808	7,087	12
19	Number performing manual labor	2,119	2,113	255	72	183	1,482	1
20	Salaried officers of corporations	[5] 935	[5] 933	638	171	467	140	4
21	Superintendents and managers	[5] 3,405	[5] 3,394	2,672	951	1,721	288	12
22	Clerks and other salaried employees	[5] 7,398	[5] 7,395	6,378	3,180	3,198	539	10
23	Wage earners, Dec. 15, 1909, or nearest representative day	385,302	384,833	357,671	173,263	184,408	7,397	726
24	Above ground	110,520	110,346	83,471	48,670	34,801	7,397	620
25	Below ground	274,782	274,487	274,200	124,593	149,607	....	106
26	Men 16 years of age and over	380,796	380,327	353,294	170,024	183,270	7,396	714
27	Engineers, firemen, mechanics, etc	26,181	26,134	20,331	12,248	8,083	4,317	161
28	Above ground	22,115	22,072	16,277	9,728	6,549	4,317	159
29	Below ground	4,065	4,062	4,054	2,520	1,534	....	2
30	Miners, miners' helpers, quarrymen, and stonecutters	218,976	218,712	206,089	83,030	123,059	....	478
31	Above ground	12,417	12,376	....	....	....	....	400
32	Below ground	206,559	206,336	206,089	83,030	123,059	....	78
33	All other employees	135,639	135,481	126,874	74,746	52,128	3,079	75
34	Above ground	72,342	72,252	63,677	35,716	27,961	3,079	49
35	Below ground	63,297	63,229	63,197	39,030	24,167	....	26
36	Boys under 16 years of age [6]	4,506	4,506	4,377	3,239	1,138	1	12
	Number of wage earners employed on the 15th day of each month:							
37	January	354,317	354,044	335,394	172,679	162,715	5,993	533
38	February	354,652	354,325	335,678	172,417	163,261	5,705	508
39	March	357,384	357,046	336,671	172,906	163,765	5,761	437
40	April	350,031	349,667	326,748	167,928	158,820	6,004	513
41	May	352,462	352,127	327,909	168,007	159,902	6,369	468
42	June	359,431	359,067	333,604	168,715	164,889	6,853	491
43	July	360,996	360,583	334,800	167,166	167,634	6,964	508
44	August	361,639	361,221	335,158	165,486	169,672	7,234	531
45	September	364,219	363,744	337,508	165,760	171,748	7,197	509
46	October	371,507	371,075	344,795	169,729	175,066	7,510	648
47	November	374,692	374,256	348,725	170,358	178,367	7,738	637
48	December	375,446	375,012	351,089	168,943	182,146	7,385	696
49	**Land controlled**, acres	[7] 5,382,309	[7] 5,352,313	[7] 2,429,842	[7] 464,274	1,965,568	2,824,122	18,158
50	Owned	2,301,707	2,296,908	1,921,520	316,767	1,604,753	308,540	13,300
51	Held under lease	3,072,291	3,067,094	520,011	159,196	360,815	2,515,582	4,858
52	Mineral and oil land	[8] 4,862,448	[8] 4,852,594	[8] 1,947,036	[8] 273,499	1,673,537	2,824,122	12,089
53	Owned	1,869,847	1,865,189	1,505,025	183,044	1,321,981	308,540	7,231
54	Held under lease	3,003,576	2,998,380	452,986	101,430	351,556	2,515,582	4,858
55	Timber land	119,398	119,392	110,424	71,851	38,573	....	6,065
56	Other land	[9] 380,463	[9] 380,327	[9] 372,382	[9] 118,924	253,458	....	4
57	**Primary horsepower**	1,621,172	1,618,806	1,080,782	676,128	404,654	478,946	3,971

---

[1] Includes operators as follows: Buhrstones and millstones, 1; peat, 1; talc and soapstone, 3.

[2] Includes operators as follows: Anthracite coal, 6; bituminous coal, 4; graphite, 1; iron, 1; marble, 1; petroleum and natural gas, 14; slate, 4.

[3] Includes $28,201,009 which could not be distributed among the several industries. Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each, and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $234,834; clerks and other salaried employees, $111,977; taxes, $66,117; and contract work, $5,308.

	PRODUCING MINES, QUARRIES, AND WELLS—continued.												Nonproducing mines, quarries, and wells.[2]
	Limestone.	Slate.	Sandstone.	Bluestone.	Traprock.	Granite.	Marble.	Clay (sold as such).	Graphite.	Mineral pigments.	Feldspar.	All other.[1]	
1	311	98	172	205	22	43	4	45	7	10	6	6	31
2	382	112	192	216	25	52	4	56	7	13	7	6	38
3	$5,260,913	$6,708,967	$3,620,203	$552,056	$1,788,458	$793,459	$942,360	$960,298	$485.795	$163,400	$103,900	$68,905	$1,942,304
4	$3,969,778	$3,407,014	$1,382,152	$479,431	$785,492	$489,899	$197,871	$409,800	$80,844	$49,878	$56,526	$21,101	$419,320
5	$137,576	$194,642	$107,183	$24,700	$17,274	$19,761	$4,920	$25,836	$7,962	$5,620	$9,997	$1,900	$17,726
6	$61,920	$61,149	$24,712	$2,200	$7,344	$7,729	$14,640	$8,226	$336	$600	$412		$4,617
7	$2,590,740	$2,399,195	$834,205	$317,041	$331,048	$336,320	$142,633	$243,446	$43,096	$13,859	$28,457	$16,025	$207,504
8	$648,094	$284,558	$179,854	$62,556	$288,845	$54,170	$10,854	$46,790	$8,675	$2,926	$7,450	$883	$93,571
9													
10	$133,856	$189,610	$66,502	$11,615	$30,549	$16,513	$16,370	$27,269	$6,197	$4,338	$5.098	$828	$3,677
11	$149,233	$196,302	$31,412	$26,242	$22 779	$17,514	$600	$23,639	$3,540	$2,883	$708	$776	$6,513
12	$19,724	$20,119	$11,130	$2,897	$4,823	$4,545	$1,954	$2,720	$1,185	$476	$400	$97	$7,859
13	$63,447	$9,025	$28,581	$1,134	$5,164	$1,406		$3,353	$4,000	$17,758			$34,571
14	$165,194	$52,414	$98,573	$31,046	$77,666	$31,932	$6,000	$28,522	$5,853	$1,418	$4,003	$593	$43,382
15	$4,733,619	$3,492,026	$1,549,508	$656,120	$639,754	$603,089	$166,037	$498,310	$116,115	$68,011	$57,901	$50,014	
16	7,732	6,038	2,802	1,310	751	871	274	763	141	77	102	55	569
17	462	285	278	313	24	67	7	74	9	11	9	7	117
18	336	120	173	285	12	42	3	49		7	3	6	104
19	110	25	41	171	5	12		7	2			2	6
20	25	50	22	6	2	11		2	4	1	2		2
21	101	115	83	23	10	14	4	23	5	3	4	2	11
22	91	115	50	7	12	21	16	12	2	1	2		3
23	7,179	5,636	2,474	990	715	783	251	677	130	65	91	48	469
24	7,179	5,636	2,474	990	715	783	251	530	118	43	91	48	174
25								147	12	22			295
26	7,173	5,558	2,459	990	715	783	251	661	130	65	90	48	469
27	321	493	210	35	116	64	19	40	15	8	3	1	47
28	321	493	210	35	116	64	19	38	11	8	3	1	43
29								2	4				4
30	5,119	2,941	1,364	771	629	645	183	398	35	44	84	32	264
31	5,119	2,941	1,364	771	629	645	183	259	27	22	84	32	41
32								139	8	22			223
33	1,733	2,124	885	184	70	74	49	223	80	13	3	15	158
34	1,733	2,124	885	184	70	74	49	217	80	13	3	16	90
35								6					68
36	6	78	15					16			1		
37	4,239	4,701	1,299	247	373	447	145	509	61	34	44	35	273
38	4,395	4,676	1,301	249	375	502	185	556	66	37	59	33	327
39	4,816	5,002	1,592	517	531	696	239	559	62	48	74	41	338
40	5,325	6,397	2,244	913	553	888	285	576	68	49	61	45	364
41	5,970	5,406	2,426	944	590	915	301	564	91	60	62	52	335
42	6,282	5,562	2,449	1,004	722	913	346	669	94	68	60	50	364
43	6,476	5,649	2,481	972	766	915	344	638	109	54	75	32	413
44	6,469	5,550	2,533	953	796	811	361	556	98	54	86	31	418
45	6,856	5,665	2,488	887	770	838	341	647	70	48	87	33	475
46	6,761	5,555	2,368	815	702	784	349	563	68	49	61	47	432
47	6,509	5,318	2,191	693	637	674	323	681	72	44	67	47	436
48	6,204	5,293	1,675	396	671	561	251	605	67	52	39	48	434
49	21,535	3,083	26,743	9,545	6,239	978	157	8,085	481	574	687	84	9,896
50	10,122	1,621	24,154	7,993	2,969	797	142	4,723	383	412	177	56	4,799
51	11,413	1,462	4,589	1,652	3,270	181	15	3,362	98	162	510	29	5,197
52	18,841	2,932	25,168	7,334	6,010	653	157	6,778	446	372	572	84	9,854
53	7,924	1,470	21,484	6,062	2,740	472	142	3,416	356	210	62	55	4,658
54	10,917	1,462	3,684	1,272	3,270	181	15	3,362	90	162	510	29	5,196
55	147	5	594	1,091		300		542	13	186	25		6
56	2,547	146	2,981	1,120	229	25		765	22	16	90		136
57	13,811	20,127	8,834	1,488	4,187	2,277	860	2,023	946	271	183	140	2,366

---

[5] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 201; salaried officers of corporations, 27; superintendents and managers, 35; and clerks and other salaried employees, 139.

[6] In the anthracite coal industry 13 boys were employed below ground and in the bituminous coal industry 847.

[7] Exclusive of 11,689 acres reported both in acres owned and acres held under lease in anthracite coal.

[8] Exclusive of 10,975 acres reported both in acres owned and acres held under lease in anthracite coal.

[9] Exclusive of 714 acres reported both in acres owned and acres held under lease in anthracite coal.

RHODE ISLAND.

Summary.—In Rhode Island in 1909, 20 operators were engaged in quarrying granite and 1 operator was engaged in quarrying talc and soapstone. Detailed statistics for these operations, which comprise all those in the state during the year, are shown in Table 1.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 1	All industries.[1]
Number of operators	21
Number of mines and quarries	27
Capital	$567,015
Expenses of operation and development	**$673,877**
Services—	
Salaried officers of corporations, superintendents, and managers	$29,948
Clerks and other salaried employees	$27,941
Wage earners	$409,883
Miscellaneous—	
Supplies	$130,947
Fuel and rent of power	$26,991
Royalties and rent of mines	$8,552
Taxes	$3,343
Rent of offices and other sundry expenses	$36,272
Value of products	**$897,606**
Persons engaged in industry	737
Proprietors and officials	37
Proprietors and firm members	18
Number performing manual labor	7
Salaried officers of corporations	7
Superintendents and managers	12
Clerks and other salaried employees	23
Wage earners, Dec. 15, 1909, or nearest representative day [2]	677
Engineers, firemen, mechanics, etc.[2]	102
Quarrymen and stonecutters	471
All other employees	104

	All industries.[1]
Number of wage earners employed on the 15th day of each month:	
January	505
February	524
March	635
April	733
May	755
June	755
July	731
August	747
September	717
October	718
November	632
December	523
Land controlled, acres	859
Owned	541
Held under lease	118
Mineral land	512
Owned	424
Held under lease	88
Timber land	60
Other land	87
Primary horsepower	2,350
Steam engines—	
Number	70
Horsepower	2,315
Gas or gasoline engines—	
Number	1
Horsepower	35

[1] Includes operators as follows: Granite, 20; talc and soapstone, 1.

[2] Includes 3 engineers, firemen, mechanics, etc., below ground.

Character of organization.—Table 2 classifies the mining operations of the state under form of organization, distinguishing corporations from individual owners and firms.

Table 2 INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.	
			Total.	Per operator.	Wage earners.	Value of products.
All industries	21	677	$897,806	$42,743	100.0	100.0
Individual	10	115	110,411	11,041	17.0	12.3
Firm	3	179	189,185	63,062	26.4	21.1
Corporation	8	383	598,010	74,751	56.6	66.6

Table 3 gives further details for incorporated enterprises distinguished from those which are unincorporated. Of the 21 operators, 8 were corporations. These corporations reported 66.6 per cent of the total value of products and employed 56.6 per cent of all wage earners.

Table 3	Incorporated.	Unincorporated.
Number of operators	8	13
Number of mines and quarries	11	16
Proprietors and firm members, total	....	18
Number performing manual labor	....	7
Salaried employees:		
Officers of corporations	7	....
Superintendents and managers	8	4
Clerks and other salaried employees	16	7
Wage earners, Dec. 15, 1909, or nearest representative day	383	294
Capital	$383,115	$183,900
Expenses of operation and development	443,943	229,934
Salaries—		
Officers of corporations	13,000	....
Superintendents and managers	9,000	7,948
Clerks and other salaried employees	23,959	3,982
Wages	257,051	152,832
Royalties and rent of mines	1,670	6,882
Taxes	2,385	958
Supplies and miscellaneous expenses	136,878	57,332
Value of products	598,010	299,596

Size of enterprises.—In Table 4 the mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 677 wage earners employed in all enterprises, 398, or 58.8 per cent, were employed in three enterprises employing over 100 wage earners each.

Table 4 INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	Number of enterprises.	WAGE EARNERS.	
		Number.	Per cent distribution.
All industries	21	677	100.0
1 to 5	3	11	1.6
6 to 20	11	132	19.5
21 to 50	4	136	20.1
Over 100	3	398	58.8

Comparison of mining industries, 1902–1909.—In the following table are presented for 1909 and 1902 such items as are comparable for the two years.

Table 5	1909	1902[1]	Per cent of increase.[2]
Wages and salaries	$467,772	$491,374	−4.8
Supplies and materials	$157,938	$85,127	85.5
Royalties and rent of mines	$8,552	$15,143	−43.5
Value of products	$897,606	$774,611	15.9
Primary horsepower	2,350	1,436	63.6

[1] Includes statistics for the production of lime which are omitted from the figures for 1909.

[2] A minus sign (−) denotes decrease.

Duplication between manufactures and mining.—In the operation of granite quarries some of the operators subjected the product obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Rhode Island involves a duplication of $657,815.

SOUTH CAROLINA.

Summary.—The total value of the products of all mines and quarries in South Carolina in 1909 amounted to $1,252,792. Of this total, phosphate rock mining, the leading industry, contributed $862,409, or 68.8 per cent. Granite quarrying and clay mining, the industries next in importance, reported products valued, respectively, at $166,710 and $133,342.

In the production of granite and gold and silver (deep mines) the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**29**	**2,014**	**$1,252,792**	**$43,200**	**100.0**	**100.0**	100.0
Unincorporated[1]	11	364	207,771	18,888	37.9	18.1	16.6
Corporation	18	1,650	1,045,021	58,057	62.1	81.9	83.4

[1] Includes 9 individuals and 2 firms.

Table 2

	Incorporated.	Unincorporated.
Number of operators	18	11
Number of mines and quarries	21	11
Proprietors and firm members, total		13
Number performing manual labor		3
Salaried employees:		
Officers of corporations	11	
Superintendents and managers	17	4
Clerks and other salaried employees	17	3
Wage earners, Dec. 15, 1909, or nearest representative day	1,650	364
Capital	$967,034	$242,356
Expenses of operation and development	865,723	169,100
Salaries—		
Officers of corporations	15,200	
Superintendents and managers	30,255	9,610
Clerks and other salaried employees	24,275	2,900
Wages	522,025	104,404
Royalties and rent of mines	9,806	530
Taxes	8,282	2,501
Supplies and miscellaneous expenses	255,880	49,155
Value of products	1,045,021	207,771

Out of a total of 29 operators in all industries, 18 were corporations. These corporations reported 83.4 per cent of the total value of products and employed 81.9 per cent of all wage earners.

Size of enterprises.—In Table 3 the producing mining enterprises are classified according to the number of wage earners employed per enterprise or operating unit. The largest enterprises were those engaged in the production of phosphate rock. Four enterprises in this industry employed 60 per cent of the wage earners reported by all enterprises.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909		
	Number of enterprises.	Wage earners.	
		Number.	Per cent distribution.
All industries	**31**	**2,014**	**100.0**
Contract work	2		
1 to 20	13	144	7.1
21 to 50	6	228	11.3
51 to 100	6	433	21.5
Over 100	4	1,209	60.0
Phosphate rock	**7**	**1,307**	**100.0**
6 to 100	3	98	7.5
Over 100	4	1,209	92.5
Granite	**11**	**321**	**100.0**
1 to 20	6	65	20.2
Over 20	5	256	79.8

Prevailing hours of labor.—In Table 4 all producing enterprises, except those operated exclusively by contract work, are classified according to the prevailing hours of labor per day in each enterprise. The table shows the total number of enterprises falling in each group, and a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In 97.6 per cent of the enterprises weighted according to the number of wage earners a day of 10 hours prevailed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909	
	Number of enterprises.	Per cent distribution of enterprises weighted according to number of wage earners.
All industries	**29**	100.0
9 hours	1	2.4
10 hours	28	97.6

Engines and power.—As shown by Table 5, the total horsepower employed in all producing enterprises was 7,012, of which 5,031, or 71.7 per cent, was employed in the phosphate rock industry.

Table 5 CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Phosphate rock.	Granite.	Gold and silver, deep mines.	All other.
Primary power (all owned): Total	7,012	5,031	1,134	303	544
Steam engines—					
Number	147	92	26	11	18
Horsepower	6,946	4,996	1,110	303	536
Gas or gasoline engines—					
Number	4	1	1		2
Horsepower	67	35	24		8

Comparison of mining industries: 1902–1909.—Table 6 presents statistics for 1909 and 1902 for such items as are comparable for the two years.

Table 6	PRODUCING ENTERPRISES.		
	1909	1902 [1]	Per cent of increase.[2]
Wages and salaries	$708,669	$1,018,729	−30.4
Supplies and materials	$242,517	$342,379	−29.2
Royalties and rent of mines	$10,336	$48,691	−78.8
Contract work	[3] $680		
Value of products	$1,252,792	$1,834,134	−31.7
Primary horsepower	7,012	4,773	46.9

[1] Includes statistics for the production of lime, which were omitted from the figures for 1909.
[2] A minus sign (—) denotes decrease.
[3] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the production of granite some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining, involving a duplication of $11,420.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	PRODUCING MINES AND QUARRIES.					
	Total.	Phosphate rock.	Granite.	Clay (sold as such).	Gold and silver, deep mines.	All other.[1]
Number of operators	29	5	11	5	4	4
Number of mines and quarries	32	7	12	5	4	4
Capital [2]	$1,209,390	$146,000	$402,213	$322,881	$178,150	$160,146
Expenses of operation and development	$1,034,823	$674,089	$177,203	$96,009	$31,935	$55,587
Services—						
Salaried officers of corporations, superintendents, and managers	$55,065	$24,129	$10,736	$11,000	$3,800	$5,400
Clerks and other salaried employees	$27,175	$9,093	$14,882	$2,000		$1,200
Wage earners	$626,429	$429,374	$96,420	$63,087	$13,895	$23,653
Miscellaneous—						
Supplies	$124,618	$71,267	$22,538	$14,105	$3,766	$12,942
Fuel and rent of power	$117,899	$87,333	$17,356	$2,017	$6,000	$5,193
Royalties and rent of mines	$10,336	$9,025	$1,303		$8	
Taxes	$10,783	$7,512	$1,415	$1,031	$624	$201
Contract work	$6,680				$680	$6.000
Rent of offices and other sundry expenses	$55,838	$36,356	$12,553	$2,769	$3,162	$998
Value of products	$1,252,792	$862,409	$166,710	$133,342	$8,550	$81,781
Persons engaged in industry	2,079	1,327	344	233	87	108
Proprietors and officials	45	14	13	7	5	6
Proprietors and firm members	13	2	5	3	2	1
Number performing manual labor	3		3			
Salaried officers of corporations	11	6	3	1		2
Superintendents and managers	21	7	5	3	3	3
Clerks and other salaried employees	20	6	10	2		2
Wage earners, Dec. 15, 1909, or nearest representative day	2,014	1,307	321	224	62	100
Above ground	1,996	1,307	321	224	51	93
Below ground	18				11	7
Men 16 years of age and over	1,965	1,267	316	220	62	100
Engineers, firemen, mechanics, etc. (all above ground)	208	136	36	12	8	16
Miners, miners' helpers, quarrymen, and stonecutters	764	427	138	159	26	14
Above ground	746	427	138	159	15	7
Below ground	18				11	7
All other employees (all above ground)	993	704	142	49	28	70
Boys under 16 years of age (all above ground)	49	40	6	4		
Number of wage earners employed on the 15th day of each month:						
January	1,930	1,390	239	150	49	93
February	1,819	1,273	245	157	49	95
March	1,608	1,092	261	167	49	39
April	1,568	1,057	261	163	55	32
May	1,675	1,126	264	154	54	78
June	1,737	1,212	267	155	5	98
July	1,977	1,462	277	152	5	81
August	1,927	1,361	313	169	6	88
September	2,015	1,390	364	155		106
October	1,833	1,291	336	135	49	22
November	1,810	1,249	320	167	49	25
December	1,868	1,289	263	161	55	100
Land controlled, acres	47,899	35,163	3,719	3,695	3,374	1,948
Owned	42,642	32,074	3,645	3,175	1,800	1,948
Held under lease	5,257	3,089	74	520	1,674	
Mineral land	45,656	35,163	1,475	3,695	3,374	1,848
Owned	40,298	32,074	1,401	3,175	1,800	1,848
Held under lease	5,257	3,089	74	520	1,674	
Timber land	100					100
Other land	2,244		2,244			
Primary horsepower	7,012	5,031	1,134	190	303	354

[1] Includes operators as follows: Fuller's earth, 1; marl, 1; monazite and zircon, 1; traprock, 1.
[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

SOUTH DAKOTA.

Summary.—The gross value of the products of the mining industry in South Dakota in 1909 amounted to $6,432,417. Deducting from this amount, $55,139, the value of the gold and silver ore produced by some establishments and used as material by others, leaves $6,377,278 as the net value of the products. Of this amount, gold and silver deep mines contributed $6,065,831, or 95.1 per cent.

In the operation of placer gold mines and in the combined total for the industries included in column headed "All other" the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work which added to the value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 39 operators, 19 were corporations. These corporations reported 96.6 per cent of the total value of products and employed 95.3 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	39	3,866	$6,432,417	$164,934	100.0	100.0	100.0
Individual	12	95	49,021	4,085	30.8	2.5	0.8
Firm	8	88	172,833	21,604	20.6	2.3	2.7
Corporation	19	3,683	6,210,563	326,872	48.7	95.3	96.6
Gold and silver, deep mines	13	3,466	6,120,970	470,844	100.0	100.0	100.0
Firm	2	35	143,813	71,907	15.4	1.0	2.3
Corporation	11	3,431	5,977,157	543,378	84.6	99.0	97.7

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 3,866 wage earners reported by all enterprises, 3,303, or 85.4 per cent, were employed by the four largest enterprises.

Table 2

	Incorporated.	Unincorporated.
Number of operators	19	20
Number of mines and quarries	24	19
Number of wells	1	2
Proprietors and firm members, total	....	31
Number performing manual labor	....	8
Salaried employees:		
Officers of corporations	10	....
Superintendents and managers	31	3
Clerks and other salaried employees	45	1
Wage earners, Dec. 15, 1909, or nearest representative day	3,683	183
Capital	$32,578,840	$119,151
Expenses of operation and development	4,984,296	169,967
Salaries—		
Officers of corporations	33,491	....
Superintendents and managers	76,498	3,120
Clerks and other salaried employees	93,428	600
Wages	3,126,521	98,154
Royalties and rent of mines	2,517	2,259
Taxes	101,684	379
Supplies and miscellaneous expenses	1,549,640	10,833
Cost of ore purchased	517	54,622
Value of products	6,210,563	221,854

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	39	100.0	3,866	100.0
No wage earners	4	10.3	....	....
1 to 5	10	25.6	26	0.7
6 to 20	11	28.2	131	3.4
21 to 100	10	25.6	406	10.5
Over 100	4	10.3	3,303	85.4
Gold and silver, deep mines	13	100.0	3,466	100.0
1 to 20	4	30.8	40	1.2
21 to 50	5	38.5	170	4.9
Over 50	4	30.8	3,256	93.9

Prevailing hours of labor.—In Table 4 all producing enterprises, except those engaged in the production of petroleum and natural gas, in which no wage earners were employed, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries [1]	35	100.0	100.0
8 hours	16	45.7	93.2
9 hours	7	20.0	4.5
10 hours	12	34.3	2.3
Gold and silver, deep mines	13	100.0	100.0
8 hours	11	84.6	99.5
10 hours	2	15.4	0.5

[1] Exclusive of petroleum and natural gas.

Duplication between manufactures and mining.—In the production of granite, sandstone, and gypsum, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result, the combined value of products for the manufacturing and mining industries in South Dakota involves a duplication of $122,244.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 15,648, of which 11,951 was developed by engines and water wheels owned by the enterprises using them and 3,697 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909			
	Total.	Gold and silver, deep mines.	Sandstone.	All other.
Primary power:				
Aggregate horsepower	15,648	14,570	275	803
Owned	11,951	11,043	105	803
Steam engines—				
Number	58	44	2	12
Horsepower	11,120	10,393	87	640
Gas or gasoline engines—				
Number	7	....	2	5
Horsepower	96	....	18	78
Water wheels—				
Number	4	2	......	2
Horsepower	735	650	......	85
Electric motors operated by purchased current—				
Number	141	135	6	......
Horsepower	3,697	3,527	170	......
Electric motors run by current generated by enterprise using:				
Number	30	22	......	8
Horsepower	716	524	......	192

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$3,446,944	$3,593,242	−4.1
Supplies and materials	$1,496,495	$1,962,937	−23.8
Royalties and rent of mines	$4,776	$8,736	−45.3
Contract work	$50	$406	−87.7
Value of products	$6,415,788	$6,697,797	−4.2
Primary horsepower	15,648	12,265	27.6

[1] A minus sign (−) denotes decrease.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.						Nonproducing gold and silver, deep mines.
		Total.	Gold and silver, deep mines.	Placer gold.	Sandstone.	Granite.	All other.[1]	
Number of operators	55	39	13	3	10	4	9	16
Number of mines, quarries, and wells	65	46	20	3	10	4	9	19
Capital	$34,388,578	$32,697,991	$31,958,028	$17,338	$37,400	$10,600	$674,725	$1,690,587
Expenses of operation and development	$5,302,165	$5,154,263	$4,845,649	$7,623	$84,449	$18,974	$197,668	$147,902
Services—								
Salaried officers of corporations, superintendents, and managers	$128,589	$113,109	$100,241	$1,380	$3,000	...	$8,488	$15,480
Clerks and other salaried employees	$96,638	$94,028	$89,420	...	$1,945	...	$2,663	$2,610
Wage earners	$3,309,003	$3,224,675	$3,016,641	$3,251	$69,781	$16,556	$118,446	$84,328
Miscellaneous—								
Supplies	$1,073,412	$1,054,532	$1,020,103	$2,270	$1,155	$1,054	$29,950	$18,880
Cost of ore purchased	$55,139	$55,139	$55,139	...	...	...	...	...
Fuel and rent of power	$425,942	$421,048	$397,256	$115	$2,251	$55	$21,371	$4,894
Royalties and rent of mines	$5,276	$4,776	$12	$5	$3,320	$839	$600	$500
Taxes	$105,251	$102,063	$101,025	...	$94	$3	$941	$3,188
Contract work	$12,050	$50	...	$50	...	...	...	$12,000
Rent of offices and other sundry expenses	$90,865	$84,843	$65,812	$452	$2,903	$467	$15,209	$6,022
Value of products	$8,432,417	$6,432,417	$6,120,970	$2,833	$89,028	$23,188	$196,398	...
Persons engaged in industry	4,169	3,987	3,544	14	188	33	208	182
Proprietors and officials	94	75	37	3	15	6	14	19
Proprietors and firm members	39	31	6	1	12	6	6	8
Number performing manual labor	13	8	1	...	5	...	2	5
Salaried officers of corporations	13	10	10	...	...	...	...	3
Superintendents and managers	42	34	21	2	3	...	8	8
Clerks and other salaried employees	51	46	41	...	2	...	3	5
Wage earners, Dec. 15, 1909, or nearest representative day	4,024	3,866	3,466	11	171	27	191	158
Above ground	2,057	2,007	1,649	11	171	27	149	50
Below ground	1,967	1,859	1,817	...	...	...	42	108
Men 16 years of age and over	4,018	3,860	3,464	11	168	26	191	158
Engineers, firemen, mechanics, etc	409	379	331	2	13	1	32	30
Above ground	383	353	314	2	13	1	23	30
Below ground	26	26	17	...	...	...	9	...
Miners, miners' helpers, quarrymen, and stonecutters	1,439	1,332	1,127	9	118	20	58	107
Above ground	193	185	3	9	118	20	35	8
Below ground	1,246	1,147	1,124	...	...	...	23	99
All other employees	2,170	2,149	2,006	...	37	5	101	21
Above ground	1,475	1,463	1,330	...	37	5	91	12
Below ground	695	686	676	...	...	...	10	9
Boys under 16 years of age (all above ground)	6	6	2	...	3	1	...	...
Number of wage earners employed on the 15th day of each month:								
January	3,532	3,464	3,297	...	86	11	70	68
February	3,406	3,341	3,188	...	67	11	75	65
March	3,496	3,423	3,240	...	113	22	48	73
April	3,650	3,579	3,235	...	169	31	144	71
May	3,652	3,572	3,185	7	175	27	178	80
June	3,704	3,616	3,174	15	201	28	198	88
July	3,850	3,743	3,290	10	167	24	252	107
August	3,957	3,846	3,398	12	163	24	249	111
September	3,984	3,859	3,449	12	158	29	211	125
October	3,878	3,748	3,367	9	145	32	195	130
November	3,823	3,699	3,360	...	143	28	168	124
December	1,706	1,585	1,285	...	113	27	160	121
Land controlled, acres	42,924	31,933	30,420	630	225	21	737	10,991
Owned	42,425	31,456	30,420	430	140	2	464	10,969
Held under lease	499	477	...	100	85	19	273	22
Mineral and oil land	22,729	11,738	10,225	530	225	21	737	10,991
Owned	22,230	11,261	10,225	430	140	2	464	10,969
Held under lease	499	477	...	100	85	19	273	22
Timber land	18,015	18,015	18,015	...	...	...	...	...
Other land	2,180	2,180	2,180	...	...	...	...	...
Primary horsepower	16,408	15,648	14,570	25	275	3	775	760

---

[1] Includes operators as follows: Gypsum, 2; limestone, 2; mica, 1; petroleum and natural gas, 3; tin, 1.

TENNESSEE.

Summary.—The gross value of the products of the mining industry in Tennessee in 1909 amounted to $12,692,547. From this amount should be deducted $41,959, the value of the copper ore and the bituminous coal sold by some operators and used as material by others. This leaves $12,650,588 as the net value of the products. Of this amount, bituminous coal mining, the leading industry, reported products valued at $6,672,108, of which $6,086,423 represented the value of the coal sold as such and $585,685 the value of the coke made at the mines.

The industry second in importance was the production of copper. Statistics for this industry can not be shown separately without revealing the operations of an individual enterprise, there being but two operators in the state. The industry is therefore included under "All other." In the production of phosphate rock, the industry third in importance, Tennessee ranked second among the states in 1909, the value of the product being $1,395,942. In the following industries, coal, iron, and metalliferous deep mines, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures, and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	216	18,028	$12,692,547	$58,762	100.0	100.0	100.0
Individual	36	434	157,020	4,362	16.7	2.4	1.2
Firm	24	702	368,737	15,364	11.1	3.9	2.9
Corporation	156	16,892	12,166,790	77,992	72.2	93.7	95.9
Bituminous coal	85	11,154	6,688,454	78,688	100.0	100.0	100.0
Individual	9	96	27,727	3,081	10.6	0.9	0.4
Firm	6	315	210,457	35,076	7.1	2.8	3.1
Corporation	70	10,743	6,450,270	92,147	82.4	96.3	96.4
Phosphate rock	23	1,725	1,395,942	60,693	100.0	100.0	100.0
Firm[1]	4	86	16,650	4,163	17.4	5.0	1.2
Corporation	19	1,639	1,379,292	72,594	82.6	95.0	98.8

[1] Includes 1 individual.

For all mines combined and for the coal and phosphate rock industries over 90 per cent of the wage earners were employed and over 95 per cent of the value of the products was produced by the corporations. In the iron-ore industry all establishments were operated by corporations.

Table 2	Incorporated.	Unincorporated.
Number of operators	156	60
Number of mines, quarries, and wells	288	78
Proprietors and firm members, total	....	87
Number performing manual labor	....	24
Salaried employees:		
Officers of corporations	141	....
Superintendents and managers	240	14
Clerks and other salaried employees	449	9
Wage earners, Dec. 15, 1909, or nearest representative day	16,892	1,136
Capital	$33,514,965	$305,012
Expenses of operation and development	11,502,036	467,221
Salaries—		
Officers of corporations	270,403	....
Superintendents and managers	328,995	9,623
Clerks and other salaried employees	374,877	4,390
Wages	7,035,720	322,863
Royalties and rent of mines	610,000	7,097
Taxes	89,664	4,911
Supplies and miscellaneous expenses	2,766,764	101,991
Cost of ore and coal purchased for material	25,613	16,346
Value of products	12,166,790	525,757

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed. For all industries combined, 68.3 per cent of the wage earners were reported by the 58 enterprises employing over 100 wage earners each. Of these 58 enterprises, 40 were engaged in bituminous coal mining and employed 79.5 per cent of all wage earners in that industry.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	241	100.0	18,028	100.0
No wage earners	1	0.4	....	....
Contract work	3	1.2	....	....
1 to 5	18	7.5	69	0.4
6 to 20	59	24.5	757	4.2
21 to 50	63	26.1	2,132	11.8
51 to 100	39	16.2	2,764	15.3
Over 100	58	24.1	12,306	68.3
Bituminous coal	95	100.0	11,154	100.0
No wage earners	1	1.1	....	....
Contract work	1	1.1	....	....
1 to 5	3	3.2	15	0.1
6 to 20	11	11.6	172	1.5
21 to 50	19	20.0	622	5.6
51 to 100	20	21.1	1,472	13.2
Over 100	40	42.1	8,873	79.5
Phosphate rock	34	100.0	1,725	100.0
Contract work	1	2.9	....	....
1 to 5	3	8.8	13	0.8
6 to 20	10	29.4	123	7.1
21 to 50	8	23.5	279	16.2
51 to 100	8	23.5	535	31.0
Over 100	4	11.8	775	44.9
Iron	19	100.0	1,659	100.0
21 to 50	8	42.1	266	16.0
51 to 100	5	26.3	381	23.0
Over 100	6	31.6	1,012	61.0

Prevailing hours of labor.—In Table 4 all producing mines and quarries, except one which employed no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. For all industries combined, 36.4 per cent of all enterprises, weighted according to the number of wage earners employed, were operated on a 9-hour basis and 48.3 per cent on a 10-hour basis. Only 8.8 per cent of the enterprises reported a day of 8 hours or under. In the phosphate rock industry a day of either 10 or 11 hours prevailed in all enterprises.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 237	100.0	100.0
8 hours and under	11	4.6	8.8
9 hours	61	25.7	36.4
10 hours	153	64.6	48.3
11 hours	9	3.8	4.1
12 hours	3	1.3	2.5
Bituminous coal	92	100.0	100.0
8 hours and under	9	9.8	12.3
9 hours	57	62.0	51.1
10 hours	25	27.2	34.9
12 hours	1	1.1	1.7
Phosphate rock	33	100.0	100.0
10 hours	27	81.8	71.6
11 hours	6	18.2	28.4
Iron	19	100.0	100.0
9 hours	1	5.3	25.6
10 hours	17	89.5	65.8
11 hours	1	5.3	8.6

[1] Exclusive of petroleum and natural gas, and 1 bituminous coal mine for which number of hours was not reported.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in the producing mining industries in the state was 34,523, of which 16,075 horsepower, or 46.6 per cent, was employed in the operation of bituminous coal mines. All the power, except 100 horsepower which was developed by electric motors operated by purchased current, was developed by engines owned by the enterprises using them.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Phosphate rock.	Iron.	All other.
Primary power:					
Aggregate horsepower	34,523	16,075	4,423	5,581	8,444
Owned	34,423	16,075	4,323	5,581	8,444
Steam engines—					
Number	459	153	53	74	179
Horsepower	34,192	16,027	4,212	5,571	8,382
Gas or gasoline engines—					
Number	27	9	10	1	7
Horsepower	231	48	111	10	62
Electric motors operated by purchased current—					
Number	1	....	1	....	......
Horsepower	100	....	100	....	......
Electric motors run by current generated by enterprise using:					
Number	275	103	120	1	51
Horsepower	14,725	4,054	9,088	25	1,558

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines, and statistics for the operation of copper smelters, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$8,054,131	$5,483,714	46.9
Supplies and materials	$1,638,019	$835,754	96.0
Royalties and rent of mines	$618,177	$414,367	49.2
Contract work	[2] $43,623	$174,496	−75.0
Value of products	$11,803,400	$9,268,074	27.4
Primary horsepower	34,376	12,407	177.1

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the operation of limestone and marble quarries, and coal and copper mines, some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Tennessee involves a duplication of $2,692,373.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.									Nonproducing mines and quarries.
		Total.	Bituminous coal.	Phosphate rock.	Iron.	Marble.	Limestone.	Clay (sold as such).	Metalliferous deep mines.	All other.[1]	
Number of operators	221	216	85	23	15	18	49	14	3	9	5
Number of mines, quarries, and wells	376	366	142	45	46	22	58	25	3	25	10
Capital[2]	$33,947,377	$33,819,977	$20,329,066	$5,941,954	$1,960,549	$1,044,760	$301,287	$222,650	$92,000	$3,927,711	$127,400
Expenses of operation and development	$12,066,848	$11,969,257	$6,859,204	$1,122,789	$834,178	$484,116	$356,694	$87,795	$78,820	$2,145,661	$97,381
Services—											
Salaried officers of corporations, superintendents, and managers	$612,239	$609,021	$329,796	$51,486	$41,489	$55,118	$22,308	$7,343	$11,270	$90,211	$3,218
Clerks and other salaried employees	$379,567	$379,267	$232,105	$21,256	$28,197	$6,745	$3,475	$3,840	$2,034	$81,615	$300
Wage earners	$7,378,022	$7,358,583	$4,838,203	$557,218	$514,191	$311,346	$231,179	$67,666	$30,851	$807,929	$19,439
Miscellaneous—											
Supplies	$1,636,973	$1,571,612	$596,846	$148,074	$113,156	$38,317	$40,724	$2,653	$14,878	$616,964	$65,361
Cost of ore and coal purchased for material	$41,959	$41,959	$16,346	....	....	....	....	....	....	$25,613	....
Fuel and rent of power	$645,471	$645,376	$100,792	$98,738	$68,019	$29,257	$15,004	$783	$6,059	$326,724	$95
Royalties and rent of mines	$618,127	$617,097	$404,429	$141,544	$28,065	$7,941	$10,699	$3,719	$6,620	$14,180	$1,030
Taxes	$94,920	$94,575	$48,704	$9,670	$6,863	$2,934	$1,177	$260	$233	$24,734	$345
Contract work	$60,472	$54,372	$6,036	$34,225	....	$694	$8	$360	$1,604	$11,445	$6,100
Rent of offices and other sundry expenses	$598,898	$597,395	$285,947	$60,578	$34,198	$31,764	$32,220	$1,171	$5,271	$146,246	$1,503
Value of products	$12,692,547	$12,692,547	$6,698,454	$1,395,942	$815,181	$613,741	$417,506	$117,849	$47,292	$2,596,482	....
Persons engaged in industry	19,092	18,968	11,729	1,799	1,735	926	1,093	271	171	1,244	124
Proprietors and officials	490	482	235	45	38	38	66	25	7	28	8
Proprietors and firm members	89	87	20	9	....	3	35	17	....	3	2
Number performing manual labor	24	24	9	....	....	....	9	5	....	1	....
Salaried officers of corporations	141	141	78	8	6	24	10	2	....	13	....
Superintendents and managers	260	254	137	28	32	11	21	6	7	12	6
Clerks and other salaried employees	459	458	340	29	38	10	6	4	2	29	1
Wage earners, Dec. 15, 1909, or nearest representative day	18,143	18,028	11,154	1,725	1,659	878	1,021	242	162	1,187	115
Above ground	7,537	7,431	1,849	1,651	1,100	878	1,021	242	104	686	106
Below ground	10,606	10,597	9,305	174	559	....	....	....	58	501	9
Men 16 years of age and over	17,777	17,667	10,918	1,701	1,577	878	1,007	240	162	1,184	110
Engineers, firemen, mechanics, etc	1,193	1,171	534	169	157	68	71	5	18	149	22
Above ground	1,007	985	377	169	154	68	71	5	18	123	22
Below ground	186	186	157	....	3	....	....	....	....	26	....
Miners, miners' helpers, quarrymen, and stonecutters	12,087	12,034	7,348	1,378	1,091	661	872	203	135	346	53
Above ground	3,775	3,731	....	1,207	615	661	872	203	77	96	44
Below ground	8,312	8,303	7,348	171	476	....	....	....	58	250	9
All other employees	4,497	4,462	3,036	154	329	149	64	32	9	689	35
Above ground	2,601	2,566	1,434	151	263	149	64	32	9	464	35
Below ground	1,896	1,896	1,602	3	66	....	....	....	....	225	....
Boys under 16 years of age[3]	366	361	236	24	82	....	14	2	....	3	5
Number of wage earners employed on the 15th day of each month:											
January	16,440	16,408	10,971	1,351	1,460	778	477	123	30	1,218	32
February	16,052	15,983	10,726	1,378	1,356	802	466	117	31	1,107	69
March	16,365	16,345	10,646	1,636	1,367	794	545	164	59	1,134	20
April	16,090	16,048	10,372	1,697	1,136	773	647	185	62	1,176	42
May	15,918	15,876	10,216	1,630	1,209	761	702	200	27	1,131	42
June	15,941	15,910	10,005	1,596	1,283	796	791	193	99	1,147	31
July	15,984	15,957	9,958	1,480	1,422	779	812	190	87	1,229	27
August	15,982	15,891	10,205	1,475	1,475	772	873	214	61	816	91
September	16,440	16,359	10,264	1,467	1,505	778	835	202	83	1,225	81
October	16,786	16,713	10,636	1,430	1,502	785	850	189	94	1,227	73
November	17,472	17,359	11,117	1,533	1,501	843	812	210	115	1,228	113
December	17,311	17,208	11,119	1,408	1,523	877	760	214	128	1,179	103
Land controlled, acres	809,634	807,131	661,507	38,876	75,256	2,132	3,941	1,951	373	23,095	2,503
Owned	674,945	674,717	548,247	35,314	65,007	1,148	2,041	553	173	22,234	228
Held under lease	134,689	132,414	113,260	3,562	10,249	984	1,900	1,398	200	861	2,275
Mineral and oil land	525,871	525,218	458,924	32,641	14,250	2,126	3,177	1,682	373	12,045	653
Owned	408,164	407,936	353,954	29,154	10,001	1,142	1,277	461	173	11,774	228
Held under lease	117,707	117,282	104,970	3,487	4,249	984	1,900	1,221	200	271	425
Timber land	154,753	154,753	128,540	4,800	21,250	....	5	8	....	150	....
Other land	129,010	127,160	74,043	1,435	39,756	6	759	261	....	10,900	1,850
Primary horsepower	34,708	34,523	16,076	4,423	5,581	2,120	1,663	81	447	8,833	185

---

[1] Includes operators as follows: Barytes, 1; bauxite, 1; copper, 2; manganese, 1; placer gold, 1; petroleum and natural gas, 1; quartz, 1; sandstone, 1.

[2] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[3] In the bituminous coal industry 198 boys were employed below ground, and in the iron industry 14.

TEXAS.

Summary.—The gross value of the products of mining enterprises in Texas in 1909 was $10,742,150. Deducting from this amount, $35,313, the value of the natural gas produced and sold by some operators to others who sold it again, leaves $10,706,837 as the net value of the products. Of this amount, $6,356,000, or 59.4 per cent, was reported by the petroleum and natural gas industry. Bituminous coal and gypsum mining, the industries next in importance, reported products valued, respectively, at $3,136,004 and $387,739.

In the production of clay the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 236 operators, 101, or 42.8 per cent, were corporations. These corporations reported 82.1 per cent of the total value of products and employed 84.3 per cent of all wage earners. In the bituminous coal industry 99.3 per cent of the value of products was reported by corporations.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**236**	**6,957**	**$10,742,150**	**$45,518**	**100.0**	**100.0**	**100.0**
Individual	64	607	839,535	13,118	27.1	8.7	7.8
Firm	68	455	988,026	14,530	28.8	6.5	9.2
Corporation	101	5,864	8,821,994	87,346	42.8	84.3	82.1
Other	3	31	92,595	30,865	1.3	0.4	0.9
Petroleum and natural gas	**163**	**1,405**	**6,391,313**	**39,211**	**100.0**	**100.0**	**100.0**
Individual	42	174	635,898	15,140	25.8	12.4	9.9
Firm	59	160	793,710	13,453	36.2	11.4	12.4
Corporation	59	1,040	4,869,110	82,527	36.2	74.0	76.2
Other	3	31	92,595	30,865	1.8	2.2	1.4
Bituminous coal	**29**	**4,234**	**3,136,004**	**108,138**	**100.0**	**100.0**	**100.0**
Firm [1]	4	117	21,127	5,282	13.8	2.8	0.7
Corporation	25	4,117	3,114,877	124,595	86.2	97.2	99.3

[1] Includes 1 individual.

Size of enterprises.—In Table 3 the producing enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Of the 238 enterprises reported, only 16 employed over 100 wage earners each. These enterprises, however, employed 62.9 per cent of the wage earners reported by all enterprises.

Table 2

	Incorporated.	Unincorporated.
Number of operators	101	135
Number of mines	60	32
Number of wells	1,367	912
Proprietors and firm members, total	....	261
Number performing manual labor	....	65
Salaried employees:		
Officers of corporations	62	....
Superintendents and managers	96	42
Clerks and other salaried employees	193	32
Wage earners, Dec. 15, 1909, or nearest representative day	5,864	1,093
Capital	$17,140,919	$2,435,050
Expenses of operation and development	6,740,585	1,437,198
Salaries—		
Officers of corporations	133,787	....
Superintendents and managers	174,239	55,699
Clerks and other salaried employees	161,145	16,892
Wages	3,463,654	533,841
Royalties and rent of mines	687,506	230,293
Taxes	56,191	6,142
Supplies and miscellaneous expenses	2,028,750	594,331
Cost of natural gas purchased and resold	35,313	....
Value of products	8,821,994	1,920,156

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**238**	**100.0**	**6,957**	**100.0**
No wage earners	8	3.4	....	....
Contract work and part-time employees	33	13.9	....	....
1 to 5	87	36.6	208	3.0
6 to 20	59	24.8	664	9.5
21 to 50	22	9.2	746	10.7
51 to 100	13	5.5	960	13.8
Over 100	16	6.7	4,379	62.9
Petroleum and natural gas	**163**	**100.0**	**1,405**	**100.0**
No wage earners	7	4.3	....	....
Contract work and part-time employees	32	19.6	....	....
1 to 5	79	48.5	190	13.6
6 to 20	35	21.5	357	25.4
21 to 50	4	2.5	106	7.5
51 to 100	3	1.8	186	13.2
Over 100	3	1.8	566	40.3
Bituminous coal	**31**	**100.0**	**4,234**	**100.0**
Contract work	1	3.2	....	....
6 to 20	3	9.7	54	1.3
21 to 50	10	32.3	358	8.5
51 to 100	7	22.6	509	12.0
Over 100	10	32.3	3,313	78.2

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined a day of eight hours prevailed in 53.6 per cent of all enterprises weighted according to the number of wage earners. In the bituminous coal industry the corresponding percentage was 70.6.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 72	100.0	100.0
8 hours	15	20.8	53.6
9 hours	14	19.4	5.3
10 hours	41	56.9	38.3
12 hours	2	2.8	2.7
Bituminous coal	29	100.0	100.0
8 hours	14	48.3	70.6
9 hours	2	6.9	1.5
10 hours	13	44.8	27.9

[1] Exclusive of petroleum and natural gas and of 1 bituminous coal mine, for which number of hours was not reported.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Texas involves a duplication of $437,990.

Engines and power.—As shown by Table 5, the total horsepower employed in all producing enterprises was 32,003, all of which was developed by engines owned by the enterprises using them.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Petroleum and natural gas.	Bituminous coal.	Gypsum.	All other.
Primary power (all owned):					
Total	32,003	23,062	6,217	762	1,982
Steam engines—					
Number	1,098	954	92	4	48
Horsepower	29,650	20,899	6,217	750	1,784
Gas or gasoline engines—					
Number	137	121		1	15
Horsepower	2,353	2,163		12	178
Electric motors run by current generated by enterprise using:					
Number	3			2	1
Horsepower	200			175	25

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, the value of the by-products of bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$4,696,677	$2,797,146	67.9
Supplies and materials	$2,197,036	$964,937	127.7
Royalties and rent of mines	$918,608	$294,530	211.9
Contract work	[2] $130,778	$1,384,548	−90.6
Value of products	$11,095,588	$6,737,696	64.7
Primary horsepower	32,537	10,037	224.2

[1] A minus sign (−) denotes decrease.

[2] Exclusive of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.									Nonproducing mines, quarries, and wells.[2]
		Total.	Petroleum and natural gas.	Bituminous coal.	Gypsum.	Limestone.	Granite.	Sandstone.	Clay (sold as such).	All other.[1]	
Number of operators	258	236	163	29	3	16	11	5	3	6	22
Number of mines, quarries, and wells	2,376	2,371	2,279	47	3	16	11	5	4	6	5
Capital	[3] $20,102,169	[3] $19,575,969	$11,821,450	$5,884,399	$906,913	$188,902	$77,600	$54,000	$116,948	$516,258	$526,200
Expenses of operation and development	$8,333,378	$8,177,783	$4,286,563	$2,812,078	$361,087	$247,280	$111,944	$51,152	$3,138	$304,540	$155,595
Services—											
Salaried officers of corporations, superintendents, and managers	[4] $371,520	[4] $363,725	$174,636	$115,072	$28,883	$6,764	$4,500	$1,200	$675	$29,395	$7,795
Clerks and other salaried employees	[4] $178,787	[4] $178,037	$68,563	$62,031	$18,816	$7,617	$3,360	....	....	$17,250	$750
Wage earners	$4,053,758	$3,997,495	$1,367,275	$2,126,043	$107,197	$167,322	$67,906	$36,430	$1,856	$133,466	$56,263
Miscellaneous—											
Supplies	$1,851,774	$1,798,102	$1,319,086	$293,264	$69,861	$24,135	$11,671	$5,800	$100	$74,185	$53,672
Cost of natural gas purchased and resold	$35,313	$35,313	$35,313	....	....	....	....	....	....	....	....
Fuel and rent of power	$276,944	$255,614	$83,709	$41,603	$69,844	$13,998	$4,791	$4,773	$60	$36,836	$21,330
Royalties and rent of mines	$917,799	$917,799	$864,968	$36,247	....	$3,066	$12,348	$587	$1	$582	....
Taxes	$62,653	$62,333	$43,958	$12,340	$2,609	$710	$486	$204	$36	$1,990	$320
Contract work	$156,496	$152,096	$120,864	$21,214	$185	$9,833	....	....	....	....	$4,400
Rent of offices and other sundry expenses	[4] $428,334	[4] $417,269	$208,291	$104,265	$63,692	$23,835	$6,882	$2,158	$410	$10,836	$11,065
Value of products	$10,742,150	$10,742,150	$6,381,313	$3,136,004	$387,739	$312,413	$135,221	$72,609	$1,853	$304,998	....
Persons engaged in industry	[5] 7,818	[5] 7,643	1,772	4,416	268	590	144	83	28	331	178
Proprietors and officials	[5] 496	[5] 461	305	79	12	25	15	5	3	15	35
Proprietors and firm members	284	261	218	8	....	18	10	4	2	1	23
Number performing manual labor	68	65	47	....	....	9	4	3	1	1	3
Salaried officers of corporations	[5] 64	[5] 62	22	22	7	2	1	....	....	6	2
Superintendents and managers	148	138	65	49	6	5	4	1	1	8	10
Clerks and other salaried employees	[5] 228	[5] 225	62	103	22	22	4	....	....	11	3
Wage earners, Dec. 15, 1909, or nearest representative day	7,095	6,957	1,405	4,234	232	543	125	88	25	305	138
Above ground	3,300	3,170	1,405	680	232	543	125	88	25	172	130
Below ground	3,795	3,787	....	3,654	....	....	....	....	....	133	8
Men 16 years of age and over	7,081	6,943	1,399	4,234	232	535	125	88	25	305	138
Engineers, firemen, mechanics, etc.	1,379	1,337	1,033	234	3	23	7	7	....	30	42
Above ground	1,346	1,304	1,033	202	3	23	7	7	....	29	42
Below ground	33	33	....	32	....	....	....	....	....	1	....
Miners, miners' helpers, quarrymen, and stonecutters	3,913	3,903	....	3,192	....	324	89	64	25	209	10
Above ground	597	595	....	....	....	324	89	64	25	93	2
Below ground	3,316	3,308	....	3,192	....	....	....	....	....	116	8
All other employees	1,789	1,703	366	808	229	188	29	17	....	66	86
Above ground	1,343	1,257	366	378	229	188	29	17	....	50	86
Below ground	446	446	....	430	....	....	....	....	....	16	....
Boys under 16 years of age (all above ground)	14	14	6	....	....	8	....	....	....	....	....
Number of wage earners employed on the 15th day of each month:											
January	6,335	6,267	1,373	4,032	119	162	174	95	15	297	68
February	6,385	6,309	1,392	4,067	97	217	169	88	12	267	76
March	6,358	6,282	1,368	4,011	153	224	157	89	17	263	76
April	6,437	6,360	1,339	4,075	182	223	167	88	15	281	77
May	6,269	6,196	1,371	3,904	149	224	182	78	....	288	73
June	6,264	6,177	1,326	3,910	166	264	170	55	....	286	87
July	6,563	6,480	1,390	4,015	165	402	162	58	....	288	83
August	6,381	6,307	1,348	3,896	199	389	113	58	....	304	74
September	6,518	6,442	1,344	3,988	194	431	102	55	....	328	76
October	6,744	6,659	1,339	4,174	190	455	120	54	....	327	85
November	6,506	6,424	1,275	4,093	157	485	98	64	....	252	82
December	6,739	6,644	1,388	4,118	200	477	90	64	10	297	95
Land controlled, acres	468,785	420,263	276,356	130,063	440	4,413	460	277	2,176	6,078	48,522
Owned	185,621	175,468	58,032	108,132	440	2,362	101	247	2,176	3,978	10,153
Held under lease	283,164	244,795	218,324	21,931	....	2,051	359	30	....	2,100	38,369
Mineral and oil land	460,132	412,358	276,356	125,774	440	3,633	460	277	2,022	3,396	47,774
Owned	178,446	168,933	58,032	104,513	440	2,282	101	247	2,022	1,296	9,513
Held under lease	281,686	243,425	218,324	21,261	....	1,351	359	30	....	2,100	38,261
Timber land	2,797	2,689	....	80	....	....	....	....	....	2,609	108
Other land	5,856	5,216	....	4,209	....	780	....	....	154	73	640
Primary horsepower	32,668	32,003	23,062	6,217	762	760	472	187	100	443	685

---

[1] Includes operators as follows: Fuller's earth, 2; gold and silver, deep mines, 2; iron, 1; quicksilver, 1.

[2] Includes operators as follows: Bituminous coal, 1; gold and silver, deep mines, 1; marble, 1; petroleum and natural gas, 19.

[3] Includes $10,499 which could not be distributed among the several industries. Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, $2,700; and clerks and other salaried employees, $400.

[5] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 3; salaried officers of corporations, 2; and clerks and other salaried employees, 1.

UTAH.

Summary.—The statistics presented include reports of smelters, concentrating mills, and cyaniding plants operated in connection with gold and silver and copper mines.

The gross value of the products of all mines and quarries in Utah in 1909 amounted to $22,083,282. Deducting from this total, $106,910, the value of the products sold by some operators and used as material by others, leaves $21,976,372 as the net value of the products. Gold and silver (deep mines), with products valued at $8,541,522, ranked first in importance among the industries, and the copper industry, with products worth $8,432,099, was second. In the production of iron ore the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 188 operators, 139, or 73.9 per cent, were corporations. These corporations reported 99.1 per cent of the total value of products and employed 97.9 per cent of all wage earners.

Table 1	PRODUCING ENTERPRISES: 1909						
INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	188	11,004	$22,083,282	$117,484	100.0	100.0	100.0
Individual	26	129	117,707	4,527	13.8	1.2	0.5
Firm	23	105	84,528	3,675	12.2	1.0	0.4
Corporation	139	10,770	21,881,047	157,418	73.9	97.9	99.1
Gold and silver, deop mines	108	3,905	8,541,522	79,088	100.0	100.0	100.0
Individual	14	56	68,260	4,876	13.0	1.4	0.8
Firm	10	20	7,131	713	9.3	0.5	0.1
Corporation	84	3,829	8,466,131	100,787	77.8	98.1	99.1
Copper	22	3,304	8,432,099	383,277	100.0	100.0	100.0
Unincorporated[1]	4	20	14,209	3,552	18.2	0.6	0.2
Corporation	18	3,284	8,417,890	467,661	81.8	99.4	99.8
Bituminous coal	14	3,160	4,111,987	293,713	100.0	100.0	100.0
Unincorporated[2]	3	16	11,635	5,878	21.4	0.5	0.3
Corporation	11	3,144	4,100,352	372,759	78.6	99.5	99.7

[1] Includes 2 individuals and 2 firms.
[2] Includes 2 individuals and 1 firm.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed. For all industries combined, 70.8 per cent of all wage earners were reported in the 20 enterprises employing over 100 wage earners each.

Table 2	Incorporated.	Unincorporated.
Number of operators	139	49
Number of mines and quarries	176	59
Proprietors and firm members, total	....	102
Number performing manual labor	....	39
Salaried employees:		
Officers of corporations	101	....
Superintendents and managers	180	7
Clerks and other salaried employees	339	2
Wage earners, Dec. 15, 1909, or nearest representative day	10,770	234
Capital	$80,544,212	$455,831
Expenses of operation and development	16,424,446	181,582
Salaries—		
Officers of corporations	251,167	....
Superintendents and managers	494,148	9,918
Clerks and other salaried employees	441,494	800
Wages	8,885,495	101,356
Royalties and rent of mines	46,542	25,369
Texas	211,037	883
Supplies and miscellaneous expenses	[1] 6,094,563	43,256
Value of products	21,881,047	202,235

[1] Includes $106,910, the cost of purchased ore.

Table 3	PRODUCING ENTERPRISES: 1909			
INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	193	100.0	11,004	100.0
No wage earners	5	2.6	....	....
Contract work	7	3.6	....	....
1 to 5	54	28.0	154	1.4
6 to 20	57	29.5	661	6.0
21 to 50	28	14.5	846	7.7
51 to 100	22	11.4	1,559	14.2
101 to 500	17	8.8	4,553	41.4
Over 500	3	1.6	3,231	29.4
Gold and silver, deep mines	109	100.0	3,905	100.0
No wage earners	3	2.8	....	....
Contract work	5	4.6	....	....
1 to 5	35	32.1	104	2.7
6 to 20	26	23.9	299	7.7
21 to 50	17	15.6	508	13.0
51 to 100	14	12.8	947	24.3
Over 100	9	8.3	2,047	52.4
Copper	22	100.0	3,304	100.0
1 to 5	7	31.8	18	0.5
6 to 50	8	36.4	105	3.2
51 to 100	3	13.6	245	7.4
Over 100	4	18.2	2,936	88.9
Bituminous coal	18	100.0	3,160	100.0
1 to 20	5	27.8	30	0.9
21 to 50	3	16.7	86	2.7
51 to 100	3	16.7	243	7.7
Over 100	7	38.9	2,801	88.6

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. A day of eight hours prevailed in 96.5 per cent of the number of enterprises weighted according to the number of wage earners. In each of the three leading industries, gold and silver, copper, and coal, only one enterprise reported a longer day.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	161	100.0	100.0
8 hours	161	89.0	96.5
9 hours	10	5.5	1.5
10 hours	10	5.5	2.0

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Utah involves a duplication of $886,960.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown by Table 5, was 47,226, of which 37,955 was developed by engines and water wheels owned by the enterprises using them and 9,271 horsepower by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Gold and silver, deep mines.	Copper.	Bituminous coal.	All other.
Primary power:					
Aggregate horsepower	47,226	16,087	22,617	6,929	1,593
Owned	37,955	11,605	18,168	6,914	1,268
Steam engines—					
Number	219	92	44	60	23
Horsepower	35,186	10,260	17,091	6,914	921
Gas or gasoline engines—					
Number	32	23	5	....	4
Horsepower	841	692	77	....	72
Water wheels—					
Number	11	8	2	....	1
Horsepower	1,928	653	1,000	....	275
Electric motors operated by purchased current—					
Number	229	83	140	1	5
Horsepower	9,271	4,482	4,449	15	325
Electric motors run by current generated by enterprise using:					
Number	177	14	95	68	....
Horsepower	12,016	730	8,075	3,211	....

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement; to omit from the 1909 figures statistics for the manufacture of coke at bituminous coal mines, which were not included in the census of 1902; and to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$10,085,225	$5,632,477	79.1
Supplies and materials	$4,995,124	$1,786,842	179.6
Royalties and rent of mines	$72,311	$40,978	76.5
Contract work	[1] $59,000	$37,054	59.2
Value of products	$21,718,741	$12,200,038	78.0
Primary horsepower	47,246	14,509	225 6

---

[1] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

	Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.					
			Total.	Gold and silver, deep mines.	Placer gold.	Copper.	Bituminous coal.	Asphaltum and bituminous rock.
1	Number of operators	499	188	108	3	22	14	3
2	Number of mines, quarries, and wells	675	235	117	4	24	22	8
3	Capital	$97,983,800	$81,000,043	$51,983,676	$43,800	$20,025,213	$5,856,501	$1,646,325
4	**Expenses of operation and development**	$18,320,567	$16,606,028	$6,064,503	$4,160	$6,415,305	$3,217,579	$162,507
	Services—							
5	Salaried officers of corporations, superintendents, and managers	$851,410	$755,233	$307,365	$100	$275,794	$118,347	$21,009
6	Clerks and other salaried employees	$459,522	$442,294	$69,718		$284,750	$77,426	$1,200
7	Wage earners	$9,848,661	$8,986,851	$3,228,884	$3,000	$3,000,093	$2,328,300	$62,006
	Miscellaneous—							
8	Supplies	[3] $4,483,488	[3] $4,027,324	$1,248,070	$500	$1,997,859	$493,259	$43,359
9	Fuel and rent of power	$1,151,700	$1,074,119	$437,813	$110	$480,307	$110,661	$10,854
10	Royalties and rent of mines	$72,111	$71,911	$45,364		$5,095	$2,169	
11	Taxes	$234,524	$211,920	$84,125	$100	$66,190	$55,183	$3,880
12	Contract work	$380,291	$265,066	$236,132		$14,006	$2,500	$9,518
13	Rent of offices and other sundry expenses	$838,850	$771,310	$408,032	$350	$291,211	$29,734	$10,681
14	**Value of products**	$22,083,282	$22,083,282	$8,541,522	$4,178	$8,432,099	$4,111,887	$218,486
15	**Persons engaged in industry**	13,360	11,735	4,182	40	3,554	3,263	90
16	Proprietors and officials	586	390	195	17	68	50	11
17	Proprietors and firm members	206	102	42	16	6	5	2
18	Number performing manual labor	57	39	17	2	3		
19	Salaried officers of corporations	129	101	54		17	18	4
20	Superintendents and managers	251	187	99	1	35	27	5
21	Clerks and other salaried employees	378	341	82		192	53	1
22	Wage earners, Dec. 15, 1909, or nearest representative day	12,396	11,004	3,905	23	3,304	3,160	78
23	Above ground	4,788	4,534	900	23	2,360	796	23
24	Below ground	7,608	6,470	3,005		954	2,365	55
25	Men 16 years of age and over	12,360	10,968	3,902	23	3,304	3,132	78
26	Engineers, firemen, mechanics, etc	1,775	1,645	432		851	330	8
27	Above ground	1,538	1,410	369		754	255	8
28	Below ground	237	235	63		97	75	
29	Miners, miners' helpers, quarrymen, and stonecutters	7,379	6,219	2,430	15	1,410	1,941	59
30	Above ground	1,031	976	59	15	625		4
31	Below ground	6,348	5,243	2,371		785	1,941	55
32	All other employees	3,206	3,104	1,040	8	1,043	861	11
33	Above ground	2,195	2,124	470	8	971	623	11
34	Below ground	1,011	980	570		72	238	
35	Boys under 16 years of age[4]	36	36	3			28	
	Number of wage earners employed on the 15th day of each month:							
36	January	10,586	9,841	3,240		3,225	2,912	68
37	February	10,451	9,683	3,262		3,197	2,800	79
38	March	10,605	9,755	3,306	1	3,280	2,653	72
39	April	10,715	9,826	3,329	6	3,362	2,621	68
40	May	10,751	9,834	3,425	7	3,405	2,473	68
41	June	11,095	10,141	3,667	23	3,428	2,463	73
42	July	11,398	10,470	3,851	8	3,476	2,581	68
43	August	11,457	10,547	3,846	8	3,479	2,638	81
44	September	11,286	10,363	3,890	7	3,268	2,667	68
45	October	10,950	10,088	3,837	2	3,115	2,699	72
46	November	10,937	10,080	3,784	2	3,154	2,670	72
47	December	11,220	10,444	3,678		3,204	3,120	78
48	**Land controlled, acres**	152,350	74,850	21,165	2,120	9,800	27,541	1,170
49	Owned	146,448	70,795	18,907	2,120	9,295	27,341	1,170
50	Held under lease	5,902	3,855	2,258		505	200	
51	Mineral and oil land	125,043	56,855	19,818	2,120	4,162	17,341	1,170
52	Owned	119,231	53,090	17,560	2,120	3,657	17,221	1,170
53	Held under lease	5,812	3,765	2,258		505	120	
54	Timber land	4,600	4,600				4,600	
55	Other land	22,707	13,195	1,347		5,638	5,600	
56	**Primary horsepower**	51,171	47,228	16,087	124	22,617	6,929	220

---

[1] Includes operators as follows: Lead and zinc, 2; marble, 1; precious stones, 1; graphite, 1; phosphate rock, 1; sulphur, 1.

[2] Includes operators as follows: Asphaltum and bituminous rock, 1; bituminous coal, 1; iron, 1; limestone, 1; lithographic stone, 1; manganese, 1; marble, 1; phosphate rock, 1; precious stones, 1.

MINING INDUSTRIES: 1909.

	PRODUCING MINES AND QUARRIES—continued.							NONPRODUCING MINES, QUARRIES, AND WELLS.				
	Iron.	Limestone.	Sandstone.	Granite.	Gypsum.	Clay (sold as such).	All other.[1]	Total.	Gold and silver, deep mines.	Placer gold.	Petroleum and natural gas.	All other.[2]
1	3	9	9	3	3	4	7	311	294	4	4	9
2	5	9	11	3	3	4	25	440	389	8	4	39
3	$286,077	$273,342	$67,486	$6,745	$406,954	$137,900	$346,124	$16,983,757	$16,650,490	$6,067	$69,000	$258,200
	$185,429	$158,112	$66,744	$20,647	$62,556	$11,817	$236,469	$1,714,529	$1,625,260	$1,664	$47,259	$40,328
5	$1,000	$4,476	$1,275	$3,562	$8,670	$1,080	$12,556	$96,177	$90,977	$387	...	$4,813
6	$1,050	$800	$1,275	...	$2,580	...	$3,495	$17,228	$16,648	...	$180	$400
7	$104,823	$102,840	$39,520	$14,375	$33,026	$8,050	$61,934	$861,810	$817,714	$725	$16,764	$26,607
8	$72,834	$21,811	$8,141	$2,616	$4,320	$660	[3] $133,895	$456,164	$432,185	$222	$17,650	$6,107
9	$5,160	$9,803	$1,162	...	$6,869	...	$11,380	$77,581	$73,718	...	$3,416	$448
10	...	$12,752	$5,931	...	...	...	$600	$200	$200	...	...	...
11	$502	$524	$30	$47	$313	$127	$899	$22,604	$22,083	$55	$225	$241
12	...	$400	$1,710	...	...	$1,800	...	$115,225	$106,650	...	$8,575	...
13	$60	$4,706	$7,700	$247	$6,778	$100	$11,711	$67,640	$65,105	$275	$450	$1,710
14	$109,844	$190,625	$71,485	$26,625	$61,493	$16,522	$285,216	...	...	...	...	...
15	81	196	85	33	85	27	98	1,625	1,505	11	16	93
16	3	23	6	6	6	6	9	196	182	5	...	9
17	...	18	4	4	...	5	...	104	96	3	...	5
18	...	11	3	...	...	3	...	18	15	2	...	1
19	2	1	...	...	2	...	3	28	28	...	...	...
20	1	4	2	2	4	1	6	64	58	2	...	4
21	3	2	2	...	4	...	2	37	35	...	1	1
22	75	171	77	27	75	21	88	1,392	1,288	6	15	83
23	12	171	77	27	75	21	60	254	196	2	16	41
24	63	...	...	...	...	...	28	1,138	1,092	4	...	42
25	75	170	73	27	75	21	88	1,392	1,288	6	15	83
26	12	7	2	1	...	...	2	130	113	...	15	2
27	12	7	2	1	...	...	2	128	111	...	16	2
28	...	...	...	...	...	...	...	2	2	...	...	...
29	63	139	49	26	17	21	49	1,160	1,098	4	...	58
30	...	139	49	26	17	21	21	55	39	...	...	16
31	63	...	...	...	...	...	28	1,105	1,059	4	...	42
32	...	24	22	...	58	...	37	102	77	2	...	23
33	...	24	22	...	58	...	37	71	46	2	...	23
34	...	...	...	...	...	...	...	31	31	...	...	...
35	...	1	4	...	...	...	...	...	...	...	...	...
36	75	149	5	16	72	12	67	745	724	...	16	5
37	75	68	5	21	70	12	74	768	743	...	14	11
38	75	135	50	24	67	12	80	850	781	...	21	48
39	75	124	63	23	67	12	81	689	817	...	21	61
40	67	132	71	31	66	12	77	917	850	...	11	56
41	67	152	85	29	65	12	77	954	887	...	13	54
42	67	156	79	29	67	12	76	928	898	...	15	15
43	67	166	69	34	68	12	79	910	879	3	7	21
44	67	127	57	38	67	12	95	923	893	...	7	23
45	67	123	58	38	67	12	98	862	827	4	6	25
46	48	125	20	26	71	12	96	857	809	4	7	37
47	48	122	1	17	71	21	84	776	730	2	3	41
48	268	3,034	865	480	4,940	1,693	1,554	77,700	73,420	320	2,020	1,940
49	268	2,902	445	160	4,940	1,693	1,554	75,653	71,793	320	1,600	1,940
50	...	132	440	320	...	...	...	2,047	1,627	...	420	...
51	268	2,424	885	480	4,940	1,693	1,654	68,188	64,194	320	2,020	1,654
52	268	2,302	445	160	4,940	1,693	1,654	66,141	62,567	320	1,600	1,654
53	...	122	440	320	...	...	...	2,047	1,627	...	420	...
54	...	...	...	...	...	...	...	...	...	...	...	...
55	...	610	...	...	...	...	...	9,512	9,226	...	...	286
56	200	300	82	...	435	...	232	3,945	3,848	...	...	97

---

[3] Includes $106,910, the cost of purchased ore.

[4] In the bituminous coal industry 11 boys were employed below ground and in the gold and silver industry (deep mines), 1.

VERMONT.

Summary.—The total value of products of all mines and quarries in Vermont in 1909 amounted to $8,221,323. Of this amount, marble, granite, and slate quarries contributed $7,971,764, or 97 per cent. Other products of the mining industry, with a combined value of $249,559, were: Talc and soapstone; clay (sold as such); limestone; mineral pigments; asbestos; and scythestones.

The total number of wage earners employed in the producing enterprises on December 15, 1909, was 8,388. Of this number, 8,113, or 96.7 per cent, were employed in the stone quarries.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 137 operators, 57 were corporations. These corporations reported 82.2 per cent of the total value of products and employed 78.2 per cent of all wage earners. In the marble industry the classification of production according to forms of organization can not be given, since to do so would disclose the operations of individual enterprises. In the slate industry the share of corporations in the total production is not so great as in the granite industry or in all industries combined.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	137	8,388	$8,221,323	$60,010	100.0	100.0	100.0
Individual[1]	36	418	441,809	12,272	26.3	5.0	5.4
Firm	44	1,409	1,022,716	23,244	32.1	16.8	12.4
Corporation	57	6,561	6,756,798	118,540	41.6	78.2	82.2
Granite	51	2,035	2,829,522	55,481	100.0	100.0	100.0
Individual	21	177	194,572	9,265	41.2	8.7	6.9
Firm	12	142	170,750	14,229	23.5	7.0	6.0
Corporation	18	1,716	2,464,200	136,900	35.3	84.3	87.1
Slate	54	2,579	1,864,591	34,529	100.0	100.0	100.0
Individual	7	168	147,163	21,023	13.0	6.5	7.9
Firm	26	1,212	811,057	31,195	48.1	47.0	43.5
Corporation	21	1,199	906,371	43,161	38.9	46.5	48.6

[1] Includes 1 estate.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed. Of the 137 producing enterprises reported in 1909 there were only 17 which had in excess of 100 wage earners, but these enterprises reported 70.8 per cent of the total number of wage earners employed in all producing mining enterprises in the state. The proportion of wage earners employed by the larger enterprises is somewhat greater in marble quarries than in granite and slate quarries.

Table 2

	Incorporated.	Unincorporated.
Number of operators	57	80
Number of mines and quarries	90	92
Proprietors and firm members, total		160
Number performing manual labor		63
Salaried employees:		
Officers of corporations	41	
Superintendents and managers	79	31
Clerks and other salaried employees	166	36
Wage earners, Dec. 15, 1909, or nearest representative day	6,561	1,827
Capital	$12,325,025	$1,667,071
Expenses of operation and development	5,544,921	1,250,347
Salaries—		
Officers of corporations	80,564	
Superintendents and managers	113,216	33,870
Clerks and other salaried employees	122,427	20,160
Wages	3,693,211	856,104
Royalties and rent of mines	46,510	37,822
Taxes	66,583	5,564
Supplies and miscellaneous expenses	1,522,410	296,827
Value of products	6,756,798	1,464,625

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	137	100.0	8,388	100.0
No wage earners	2	1.5		
Contract work	1	0.7		
1 to 5	20	14.6	70	0.8
6 to 20	49	35.8	534	6.4
21 to 50	38	27.7	1,140	13.6
51 to 100	10	7.3	704	8.4
Over 100	17	12.4	5,940	70.8
Marble	12	100.0	3,463	100.0
6 to 20	4	33.3	60	1.7
21 to 100	4	33.3	201	5.8
Over 100	4	33.3	3,202	92.5
Granite	51	100.0	2,035	100.0
No wage earners	2	3.9		
1 to 5	14	27.5	49	2.4
6 to 20	20	39.2	196	9.6
21 to 50	6	11.8	158	7.8
51 to 100	3	5.9	229	11.3
Over 100	6	11.8	1,403	68.9
Slate	54	100.0	2,579	100.0
1 to 20	17	31.5	188	7.8
21 to 50	26	48.1	805	31.2
51 to 100	4	7.4	251	9.7
Over 100	7	13.0	1,335	51.8

Prevailing hours of labor.—In Table 4 all producing enterprises, except those which employed no wage earners and one operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise. The table shows the percentage of the total number of enterprises falling into each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since in some cases a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In nearly one-half of all the enterprises 10 hours per day were the prevailing hours of labor, and the enterprises in which these hours are found employ somewhat over two-thirds of all the wage earners reported.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 133	100.0	100.0
8 hours	45	33.8	24.2
9 hours	22	16.5	7.5
10 hours	66	49.6	68.4
Marble	12	100.0	100.0
10 hours	12	100.0	100.0
Granite	48	100.0	100.0
8 hours	44	91.7	99.2
9 hours	4	8.3	0.8
Slate	54	100.0	100.0
9 hours	16	29.6	23.0
10 hours	38	70.4	77.0

[1] Exclusive of 1 granite quarry for which number of hours was not reported.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown in Table 5, was 25,668, of which 23,590 horsepower was developed by engines and water wheels owned by the enterprises using them, and 2,078 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Marble.	Granite.	Slate.	All other.
Primary power:					
Aggregate horsepower	**25,668**	**11,272**	**6,649**	**6,370**	**1,377**
Owned	23,590	11,272	4,875	6,136	1,307
Steam engines—					
Number	468	85	140	222	21
Horsepower	17,144	5,704	4,819	5,710	911
Gas or gasoline engines—					
Number	5	1	2	2	......
Horsepower	102	3	56	43	......
Water wheels—					
Number	34	16	....	6	12
Horsepower	6,344	5,565	....	383	396
Electric motors operated by purchased current—					
Number	61	....	49	9	3
Horsepower	2,078	....	1,774	234	70
Electric motors run by current generated by enterprise using:					
Number	192	190	....	....	2
Horsepower	5,375	5,335	....	....	40

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to include for 1909 figures for the production of lime, which were included in the report on mines and quarries for 1902, but classified as a manufacturing industry in 1909. In any case only the few items specified in Table 6 can be compared for the two years.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$4,899,736	$3,490,476	40.4
Supplies and materials	$1,386,827	$1,076,143	28.9
Royalties and rent of mines	$85,632	$101,546	−15.7
Contract work	$64,988	....	....
Value of products	$8,471,725	$5,904,705	43.5
Primary horsepower	25,916	14,979	73.0

[1] A minus sign (—) denotes decrease.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. Such enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for manufacturing and mining industries in Vermont involves a duplication of $6,699,723.

DETAILED STATISTICS FOR MINING INDUSTRIES : 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.								Nonproducing mines and quarries.[2]
		Total.	Marble.	Granite.	Slate.	Limestone.	Talc and soapstone.	Clay (sold as such).	All other.[1]	
Number of operators	141	137	12	51	54	3	8	4	5	4
Number of mines and quarries	188	182	22	67	71	3	10	4	5	6
Capital[3]	$14,994,696	$13,992,096	$6,941,730	$4,308,364	$2,222,634	$31,500	$348,339	$74,099	$65,430	$1,002,600
Expenses of operation and development	$6,877,481	$8,795,288	$2,598,233	$2,305,922	$1,886,993	$13,135	$116,890	$20,247	$53,848	$82,213
Services—										
Salaried officers of corporations, superintendents, and managers	$227,650	$227,650	$73,974	$73,330	$62,798	$1,220	$10,392	$1,500	$4,438	...
Clerks and other salaried employees	$142,587	$142,587	$38,380	$75,141	$28,548	...	$1,618	...	$900	...
Wage earners	$4,475,209	$4,449,315	$1,786,836	$1,376,111	$1,204,333	$6,880	$58,871	$11,642	$24,662	$25,894
Miscellaneous—										
Supplies	$955,438	$905,157	$276,751	$433,750	$150,838	$698	$20,295	$1,892	$20,933	$50,281
Fuel and rent of power	$367,468	$362,438	$123,489	$139,786	$84,872	$770	$10,040	$3,100	$381	$5,030
Royalties and rent of mines	$84,332	$84,332	$4,218	$14,762	$81,249	$200	$3,903	...	...	...
Taxes	$72,645	$72,147	$50,660	$14,714	$5,248	$247	$571	$163	$544	$498
Contract work	$64,698	$64,698	...	$43,399	$18,219	$3,080	...	...	...	...
Rent of offices and other sundry expenses	$487,454	$486,944	$263,925	$134,929	$72,888	$60	$11,200	$1,950	$1,992	$510
Value of products	$8,221,323	$8,221,323	$3,277,851	$2,829,522	$1,884,591	$17,580	$120,328	$35,465	$76,186	...
Persons engaged in industry	8,940	8,901	3,573	2,204	2,775	40	184	41	104	39
Proprietors and officials	320	311	38	95	146	4	10	9	9	9
Proprietors and firm members	169	160	7	49	85	1	4	8	8	9
Number performing manual labor	64	63	...	22	39	...	1	1	...	1
Salaried officers of corporations	41	41	8	13	17	...	1	1	1	...
Superintendents and managers	110	110	23	33	44	3	5	...	2	...
Clerks and other salaried employees	202	202	72	74	50	...	4	...	2	...
Wage earners, Dec. 15, 1909, or nearest representative day	8,418	8,388	3,463	2,035	2,579	36	150	32	93	30
Above ground	7,973	7,943	3,463	2,035	2,192	36	103	22	92	30
Below ground	445	445	...	...	387	...	47	10	1	...
Men 16 years of age and over	8,402	8,372	3,463	2,033	2,565	36	150	32	93	30
Engineers, firemen, mechanics, etc	633	621	239	142	198	6	23	2	11	12
Above ground	616	604	239	142	185	6	19	2	11	12
Below ground	17	17	...	...	13	...	4	...	...	...
Miners, miners' helpers, quarrymen, and stonecutters	4,374	4,356	1,009	1,639	1,546	28	85	13	36	18
Above ground	3,950	3,932	1,009	1,639	1,172	28	46	3	35	18
Below ground	424	424	...	...	374	...	39	10	1	...
All other employees	3,395	3,395	2,215	252	821	2	42	17	46	...
Above ground	3,391	3,391	2,215	252	821	2	38	17	46	...
Below ground	4	4	...	...	...	...	4	...	...	...
Boys under 16 years of age (all above ground)	16	16	...	2	14	...	...	...	...	...
Number of wage earners employed on the 15th day of each month:										
January	7,369	7,319	3,096	1,960	2,119	...	103	13	28	50
February	7,555	7,505	3,209	2,031	2,132	...	108	13	12	50
March	7,802	7,743	3,360	2,103	2,117	12	109	13	29	59
April	8,144	8,084	3,571	2,164	2,170	20	96	20	43	60
May	8,385	8,326	3,609	2,261	2,262	17	97	32	48	59
June	8,618	8.562	3,497	2,293	2,533	28	114	37	60	56
July	8,771	8,712	3,675	2,258	2,548	28	112	26	65	59
August	8,784	8,727	3,715	2,219	2,562	22	115	32	62	57
September	8,765	8,703	3,713	2,207	2,548	26	116	29	64	62
October	8,601	8,546	3,642	2,147	2,505	32	121	26	73	55
November	8,171	8,118	3,490	1,940	2,425	40	121	25	77	53
December	7,419	7,398	3,549	1,205	2,447	36	69	18	74	21
Land controlled, acres	36,663	35,327	27,006	2,380	3,078	47	1,167	523	1,117	1,336
Owned	34,520	33,190	26,480	1,932	2,322	42	774	523	1,117	1,330
Held under lease	2,143	2,137	526	457	756	5	393	...	...	6
Mineral land	9,755	8,419	2,776	1,986	1,566	47	1,067	495	482	1,336
Owned	7,761	6,431	2,251	1,629	858	42	674	495	482	1,330
Held under lease	1,994	1,988	525	357	708	5	393	...	...	6
Timber land	8,892	8,892	6,800	122	1,242	...	90	28	610	...
Other land	18.016	18,016	17,430	281	270	...	10	...	25	...
Primary horsepower	26,576	25,668	11,272	6,649	6,370	115	663	121	478	908

[1] Includes operators as follows: Asbestos, 1; mineral pigments, 3; scythestones, 1.
[2] Includes operators as follows: Marble, 1; gold and silver, deep mines, 1; slate, 2.
[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

VIRGINIA.

Summary.—The total value of products for all producing mines and quarries in Virginia, in 1909, was $8,795,646. Of this amount, the two leading industries, bituminous coal mining and iron ore mining, contributed $6,671,331, or 75.8 per cent. Of the total for the two industries, bituminous coal, including the coal sold as such and the coke made at the mines, contributed $4,988,328, of which $2,776,965 represented the value of the coal and $2,211,363 the value of the coke. The value of the products of the iron-ore industry was $1,683,003.

In the production of bituminous coal, slate, and pyrite, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 150 operators, 92, or 61.3 per cent, were corporations. These corporations reported 94.6 per cent of the total value of products and employed 93.1 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**150**	**16,893**	**$8,795,646**	**$58,638**	**100.0**	**100.0**	**100.0**
Individual [1]	35	595	198,877	5,682	23.3	3.5	2.3
Firm	23	564	278,385	12,104	15.3	3.3	3.2
Corporation	92	15,734	8,318,384	90,417	61.3	93.1	94.6
Bituminous coal	**42**	**10,042**	**4,988,328**	**118,770**	**100.0**	**100.0**	**100.0**
Individual	4	30	13,090	3,273	9.5	0.3	0.3
Firm	4	298	119,191	29,798	9.5	3.0	2.4
Corporation	34	9,714	4,856,047	142,825	81.0	96.7	97.3
Iron	**17**	**3,077**	**1,683,003**	**99,000**	**100.0**	**100.0**	**100.0**
Individual and firm [2]	5	122	25,146	5,029	29.4	4.0	1.5
Corporation	12	2,955	1,657,857	138,155	70.6	96.0	98.5

[1] Includes 1 estate.

[2] Includes 2 individuals and 3 firms.

Size of enterprises.—In Table 3 the producing enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. Out of a total of 16,893 wage earners reported by all industries 11,977, or 70.9 per cent, were employed in the 32 enterprises employing over 100 wage earners each. In bituminous coal mining 6,447 wage earners, or 64.2 per cent of the total number reported by the industry, were employed in the 5 enterprises employing over 500 wage earners each.

Table 2	Incorporated.	Unincorporated.
Number of operators	92	58
Number of mines and quarries	184	60
Proprietors and firm members, total	....	86
Number performing manual labor	....	15
Salaried employees:		
Officers of corporations	77	....
Superintendents and managers	144	22
Clerks and other salaried employees	355	19
Wage earners, Dec. 15, 1909, or nearest representative day	15,734	1,159
Capital	$54,377,482	$1,615,211
Expenses of operation and development	8,450,121	413,833
Salaries—		
Officers of corporations	151,387	....
Superintendents and managers	183,929	21,939
Clerks and other salaried employees	244,253	11,113
Wages	4,953,832	275,955
Royalties and rent of mines	404,338	14,015
Taxes	147,182	2,892
Supplies and miscellaneous expenses	2,365,200	87,919
Value of products	8,318,384	477,262

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	**182**	**100.0**	**16,893**	**100.0**
1 to 5	18	9.9	56	0.3
6 to 20	46	25.3	627	3.7
21 to 50	54	29.7	1,992	11.8
51 to 100	32	17.6	2,241	13.3
101 to 500	27	14.8	5,530	32.7
Over 500	5	2.7	6,447	38.2
Bituminous coal	**47**	**100.0**	**10,042**	**100.0**
1 to 5	5	10.6	13	0.1
6 to 20	5	10.6	57	0.6
21 to 50	12	25.5	388	3.9
51 to 100	7	14.9	494	4.9
101 to 500	13	27.7	2,643	26.3
Over 500	5	10.6	6,447	64.2
Iron	**44**	**100.0**	**3,077**	**100.0**
1 to 20	8	18.2	96	3.1
21 to 50	16	36.4	631	20.5
51 to 100	12	27.3	816	26.5
Over 100	8	18.2	1,534	49.9

Prevailing hours of labor.—In Table 4 all producing enterprises are classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. In 90.4 per cent of all enterprises, weighted according to the number of wage earners, a day of 10 hours prevailed. In bituminous coal mines and iron mines the corresponding percentages were 93.4 and 99.7, respectively.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 180	100.0	100.0
8 hours	11	6.1	1.2
9 hours	18	10.0	5.7
10 hours	150	83.3	90.4
11 hours	1	0.6	2.8
Bituminous coal	45	100.0	100.0
8 hours	3	6.7	0.6
9 hours	9	20.0	6.0
10 hours	33	73.3	93.4
Iron	44	100.0	100.0
8 hours	1	2.3	0.3
10 hours	43	97.7	99.7

[1] Exclusive of 2 bituminous coal mines for which number of hours was not reported.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Virginia involves a duplication of $3,095,356.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 34,630, all of which, except 170 developed by electric motors operated by purchased current, was developed by engines and water wheels or motors owned by the enterprises using them.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909			
	Total.	Bituminous coal.	Iron.	All other.
Primary power:				
Aggregate horsepower	**34,630**	**16,630**	**6,458**	**11,542**
Owned	34,460	16,460	6,458	11,542
Steam engines—				
Number	464	128	141	195
Horsepower	33,265	16,451	6,200	10,614
Gas or gasoline engines—				
Number	5	2	3	
Horsepower	62	9	53	
Water wheels—				
Number	[1] 9		[2] 4	[3] 5
Horsepower	1,133		205	928
Electric motors operated by purchased current:				
Number	9	9		
Horsepower	170	170		
Electric motors run by current generated by enterprise using:				
Number	327	296	1	30
Horsepower	10,577	9,775	20	782

[1] Includes 4 water motors of 865 horsepower.
[2] Includes 1 water motor of 115 horsepower.
[3] Includes 3 water motors of 750 horsepower.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902, it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement; to omit from the 1909 figures, as they appear in the other tables in this chapter, the statistics for the production of coke at bituminous coal mines, and to add to the 1909 statistics figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$5,501,589	$3,876,556	41.9
Supplies and materials	$1,855,201	$837,287	121.6
Royalties and rent of mines	$421,863	$318,763	32.3
Contract work	$119,043	$35,964	231.0
Value of products	$8,999,920	$6,280,148	43.3
Primary horsepower	35,554	15,539	128.8

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7

	Aggregate.	PRODUCING MINES AND QUARRIES.									Nonproducing mines and quarries.[2]
		Total.	Bituminous coal.	Iron.	Talc and soapstone.	Granite.	Limestone.	Slate.	Pyrite.	All other.[1]	
Number of operators	163	150	42	17	10	23	26	8	4	20	13
Number of mines and quarries	262	244	85	58	11	27	27	10	4	22	18
Capital	$56,767,141	$55,992,693	$42,337,222	$6,476,387	$2,761,241	$632,135	$707,923	$763,941	$858,097	$1,456,747	$764,448
Expenses of operation and development	$8,967,896	$8,863,954	$5,286,920	$1,511,243	$512,833	$370,159	$264,878	$234,308	$426,423	$257,186	$103,942
Services—											
Salaried officers of corporations, superintendents, and managers	$373,104	$357,256	$202,349	$39,438	$23,105	$24,298	$9,509	$14,676	$19,760	$24,221	$15,849
Clerks and other salaried employees	$256,440	$255,366	$180,385	$18,312	$20,104	$7,851	$4,647	$5,840	$13,469	$4,858	$1,074
Wage earners	$5,265,761	$5,229,787	$3,204,769	$843,006	$292,603	$245,814	$144,910	$149,682	$241,581	$107,522	$35,974
Miscellaneous—											
Supplies	$1,203,463	$1,173,866	$558,800	$208,213	$114,679	$32,111	$66,384	$39,983	$93,845	$59,951	$29,697
Fuel and rent of power	$488,156	$484,527	$230,282	$117,029	$32,092	$19,610	$13,886	$9,043	$38,709	$23,876	$3,629
Royalties and rent of mines	$419,603	$418,353	$251,824	$148,130	$400	$5,579	$3,219	$3,121	...	$6,080	$1,250
Taxes	$150,941	$150,074	$117,232	$16,565	$4,668	$2,046	$1,740	$2,276	$3,999	$1,548	$867
Contract work	$119,613	$119,028	$114,453	$945	$900	...	...	...	$2,730	...	$585
Rent of offices and other sundry expenses	$690,815	$675,698	$426,826	$119,605	$24,488	$32,850	$20,683	$9,786	$12,330	$29,130	$15,117
Value of products	$8,795,646	$8,795,646	$4,988,328	$1,683,003	$519,682	$473,344	$300,438	$182,643	$368,232	$280,066	...
Persons engaged in industry	17,777	17,596	10,418	3,160	835	789	663	476	717	538	181
Proprietors and officials	344	329	128	43	16	42	34	19	8	39	15
Proprietors and firm members	88	86	15	6	2	19	23	1	...	20	2
Number performing manual labor	15	15	...	...	...	2	8	...	...	5	...
Salaried officers of corporations	82	77	42	3	4	9	1	10	5	3	5
Superintendents and managers	174	166	71	34	10	14	10	8	3	16	8
Clerks and other salaried employees	378	374	248	40	31	11	8	8	19	9	4
Wage earners, Dec. 15, 1909, or nearest representative day	17,055	16,893	10,042	3,077	788	736	621	449	690	490	162
Above ground	8,780	8,647	3,175	2,232	633	736	621	437	425	388	133
Below ground	8,275	8,246	6,867	845	155	...	...	12	265	102	29
Men 16 years of age and over	16,801	16,641	9,915	3,011	779	734	613	435	672	482	160
Engineers, firemen, mechanics, etc	1,809	1,786	772	363	372	53	48	45	99	34	23
Above ground	1,619	1,596	623	349	371	53	48	45	87	20	23
Below ground	190	190	149	14	1	...	...	...	12	14	...
Miners, miners' helpers, quarrymen, and stonecutters	9,263	9,214	4,970	2,346	230	483	413	332	189	251	49
Above ground	3,079	3,057	...	1,562	78	483	413	320	26	175	22
Below ground	6,184	6,157	4,970	784	152	...	...	12	163	76	27
All other employees	5,729	5,641	4,173	302	177	198	152	58	384	197	88
Above ground	3,947	3,861	2,527	271	176	198	152	58	294	185	86
Below ground	1,782	1,780	1,646	31	1	...	...	...	90	12	2
Boys under 16 years of age	254	252	127	66	9	2	8	14	18	8	2
Above ground	135	133	26	50	8	2	8	14	18	8	2
Below ground	119	119	102	16	1	...	...	...	...	...	...
Number of wage earners employed on the 15th day of each month:											
January	14,658	14,602	9,014	2,590	690	558	492	347	662	249	56
February	14,563	14,509	8,789	2,688	707	576	454	376	676	244	54
March	14,589	14,534	8,620	2,793	712	652	403	383	719	252	55
April	14,830	14,771	8,734	2,733	743	683	442	433	684	319	59
May	14,864	14,782	8,727	2,662	761	679	463	440	730	320	82
June	15,356	15,275	9,078	2,605	843	693	472	446	767	371	81
July	15,474	15,377	9,075	2,703	865	618	509	468	720	419	97
August	15,916	15,768	9,168	2,950	895	667	521	432	718	417	148
September	15,768	15,621	9,032	3,019	895	642	513	442	675	403	147
October	15,615	15,457	9,206	2,753	781	662	529	440	693	393	158
November	16,151	15,993	9,596	2,837	795	675	559	440	724	367	158
December	16,561	16,399	9,967	2,932	763	694	542	436	690	375	162
Land controlled, acres	307,060	294,416	170,479	96,379	8,162	2,396	889	4,938	6,376	4,797	12,644
Owned	171,726	166,583	86,282	58,387	7,338	1,130	628	4,665	4,137	4,016	5,143
Held under lease	135,334	127,833	84,197	37,992	824	1,266	261	273	2,239	781	7,501
Mineral land	257,747	248,211	169,296	64,206	3,435	1,975	881	2,167	3,162	3,089	9,636
Owned	124,308	122,273	85,217	26,384	2,611	709	628	1,894	2,522	2,308	2,035
Held under lease	133,439	125,938	84,079	37,822	824	1,266	253	273	640	781	7,501
Timber land	25,852	25,752	710	22,953	325	140	...	137	116	1,372	100
Other land	23,461	20,453	473	9,220	4,402	281	8	2,634	3,099	336	3,008
Primary horsepower	35,812	34,630	16,630	6,458	2,932	1,773	1,122	950	3,445	1,320	1,182

---

[1] Includes operators as follows: Barytes, 2; buhrstones and millstones, 2; clay, 1; feldspar, 1; gold and silver, deep mines, 1; gypsum, 2; manganese, 2; marl, 1; mica, 3 mineral pigments, 1; sandstone, 4.

[2] Includes operators as follows: Bituminous coal, 1; gold and silver, deep mines, 4; iron, 1; manganese, 3; mica, 1; pyrite, 1; slate, 1; titanium, 1.

WASHINGTON.

Summary.—The total value of the products of mines and quarries in Washington in 1909 amounted to $10,537,556. Of this amount the bituminous coal mining industry, including the coal sold as such and the coke made at the mines, contributed $9,226,793, of which $8,986,189 represented the value of the coal and $240,604 the value of the coke. Granite and sandstone quarrying, which reported products valued respectively at $739,107 and $271,207, were the industries next in importance.

In the production of sandstone, gold and silver (deep mines), and copper, the expenses of operation and development exceeded the value of the products. This was due in part to unprofitable mining ventures and in part to expenditures for development work which added to the permanent value of the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 93 operators, 65 were corporations. These corporations reported 95.6 per cent of the total value of products and employed 94.8 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	93	7,343	$10,537,556	$113,307	100.0	100.0	100.0
Individual	16	207	308,786	19,299	17.2	2.8	2.9
Firm	12	177	150,915	12,576	12.9	2.4	1.4
Corporation	65	6,959	10,077,855	155,044	69.9	94.8	95.6
Bituminous coal	32	6,155	9,226,793	288,337	100.0	100.0	100.0
Individual[1]	4	71	114,229	28,557	12.5	1.2	1.2
Corporation	28	6,084	9,112,564	325,449	87.5	98.8	98.8
Granite	14	469	739,107	52,793	100.0	100.0	100.0
Individual[1]	8	169	232,447	29,056	57.1	33.9	31.4
Corporation	6	310	506,660	84,443	42.9	66.1	68.6

[1] Includes 1 firm.

Size of enterprises.—In Table 3 the producing enterprises are classified according to the number of wage earners employed per enterprise or operating unit. Of the 102 producing enterprises only 15 employed over 100 wage earners each. These enterprises, however, employed 69.7 per cent of the wage earners reported by all enterprises.

Table 2

	Incorporated.	Unincorporated.
Number of operators	65	28
Number of mines and quarries	129	41
Proprietors and firm members, total	....	48
Number performing manual labor	....	16
Salaried employees:		
Officers of corporations	29	....
Superintendents and managers	76	9
Clerks and other salaried employees	143	5
Wage earners, Dec. 15, 1909, or nearest representative day	6,959	384
Capital	$12,258,210	$816,481
Expenses of operation and development	7,428,321	372,401
Salaries—		
Officers of corporations	37,449	....
Superintendents and managers	158,156	17,593
Clerks and other salaried employees	126,408	5,060
Wages	5,599,719	291,288
Royalties and rent of mines	133,384	7,847
Taxes	91,426	2,167
Supplies and miscellaneous expenses	1,281,779	48,446
Value of products	10,077,855	459,701

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	102	100.0	7,343	100.0
No wage earners	2	2.0	....	....
Contract work	3	2.9	....	....
1 to 5	19	18.6	59	0.8
6 to 20	27	26.5	322	4.4
21 to 50	22	21.6	773	10.5
51 to 100	14	13.7	1,074	14.6
Over 100	15	14.7	5,115	69.7
Bituminous coal	40	100.0	6,155	100.0
1 to 20	9	22.5	111	1.8
21 to 50	7	17.5	282	4.6
51 to 100	10	25.0	772	12.5
Over 100	14	35.0	4,990	81.1
Granite	14	100.0	469	100.0
1 to 5	3	21.4	11	2.3
6 to 20	5	35.7	60	12.8
Over 20	6	42.9	398	84.9

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined a day of eight hours prevailed in 88.7 per cent of the enterprises weighted according to the number of wage earners. In the production of bituminous coal the corresponding percentage was 98.8.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	97	100.0	100.0
8 hours	66	68.0	88.7
9 hours	10	10.3	3.4
10 hours	20	20.6	7.8
11 hours	1	1.0	0.1
Bituminous coal	40	100.0	100.0
8 hours	38	95.0	98.8
9 hours	1	2.5	0.9
10 hours	1	2.5	0.3
Granite	14	100.0	100.0
8 hours	5	35.7	28.4
9 hours	3	21.4	11.9
10 hours	6	42.9	59.7

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries in Washington involves a duplication of $681,100.

Engines and power.—The aggregate horsepower employed in producing enterprises, as shown by Table 5, was 20,742, of which 20,117 was developed by engines and water wheels or motors owned by the enterprises using them and 625 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Granite.	Gold and silver, deep mines.	All other.
Primary power:					
Aggregate horsepower	**20,742**	**16,612**	**1,217**	**1,201**	**1,512**
Owned	20,117	16,641	972	1,032	1,472
Steam engines—					
Number	215	133	34	17	31
Horsepower	19,446	16,300	972	707	1,467
Gas or gasoline engines—					
Number	7	1	....	6	......
Horsepower	132	7	....	125	......
Water wheels—					
Number	[1]8	[1]6	....	1	1
Horsepower	539	334	....	200	5
Electric motors operated by purchased current—					
Number	22	6	6	9	1
Horsepower	625	171	245	169	40
Electric motors run by current generated by enterprise using:					
Number	177	169	6	1	1
Horsepower	5,994	5,834	135	10	15

[1] Includes 2 water motors of 14 horsepower.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	**1902**	Per cent of increase.[1]
Wages and salaries	$6,342,392	$4,063,773	56.1
Supplies and materials	$1,196,670	$615,807	94.3
Royalties and rent of mines	$141,231	$56,558	149.7
Contract work	[2] $23,849	$29,600	—19.4
Value of products	$10,826,503	$5,393,659	100.7
Primary horsepower	20,967	11,910	76.2

[1] A minus sign (—) denotes decrease.

[2] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.								NONPRODUCING MINES AND QUARRIES.		
		Total.	Bituminous coal.	Granite.	Sandstone.	Gold and silver, deep mines.	Placer gold.	Copper.	All other.[1]	Total.	Gold and silver, deep mines.	All other.[2]
Number of operators	416	93	32	14	11	18	5	6	7	323	308	15
Number of mines and quarries	1,250	170	54	25	12	49	12	7	11	1,080	1,047	33
Capital[3]	$21,305,841	$13,074,691	$9,685,316	$965,072	$377,148	$1,191,849	$291,500	$245,018	$318,788	$8,231,150	$7,559,287	$671,863
Expenses of operation and development	$8,674,564	$7,800,722	$6,533,164	$578,591	$276,433	$256,170	$3,696	$33,247	$119,422	$873,842	$805,953	$67,889
Services—												
Salaried officers of corporations, superintendents, and managers	$309,236	$213,198	$132,530	$25,650	$17,590	$22,378	...	$5,600	$9,450	$96,038	$81,648	$14,390
Clerks and other salaried employees	$136,693	$131,468	$113,910	$7,570	$5,940	$2,518	...	...	$1,530	$5,225	$4,925	$300
Wage earners	$6,378,923	$5,891,007	$5,040,450	$413,764	$200,028	$150,431	$452	$14,792	$71,090	$487,916	$464,123	$33,793
Miscellaneous—												
Supplies	$1,022,591	$843,025	$667,534	$81,892	$24,082	$49,792	$65	$8,344	$11,316	$179,566	$166,915	$12,651
Fuel and rent of power	$255,065	$245,852	$195,163	$24,997	$7,112	$12,705	...	$2,745	$3,130	$9,213	$8,989	$224
Royalties and rent of mines	$142,239	$141,231	$103,330	$3,389	$5,003	$9,859	...	...	$19,650	$1,008	$8	$1,000
Taxes	$103,356	$93,593	$85,484	$2,750	$1,569	$2,855	$28	$351	$556	$9,763	$9,075	$688
Contract work	$62,741	$14,462	$10,162	...	...	...	$3,100	...	$1,200	$48,279	$48,277	$2
Rent of offices and other sundry expenses	$263,720	$226,886	$184,601	$18,579	$15,109	$5,632	$50	$1,415	$1,500	$36,834	$31,993	$4,841
Value of products	$10,537,556	$10,537,556	$9,228,793	$739,107	$271,207	$156,227	$3,700	$15,436	$125,084	...	...	...
Persons engaged in industry	9,257	7,653	6,348	504	394	232	7	39	129	1,604	1,476	128
Proprietors and officials	607	162	69	26	18	27	3	6	13	445	407	38
Proprietors and firm members	398	48	6	8	7	15	3	3	6	350	319	31
Number performing manual labor	67	16	2	6	1	4	...	3	...	51	...	...
Salaried officers of corporations	51	29	16	6	...	2	...	2	3	22	18	4
Superintendents and managers	158	85	47	12	11	10	...	1	4	73	70	3
Clerks and other salaried employees	158	148	124	9	9	3	...	...	3	10	10	...
Wage earners, Dec. 15, 1909, or nearest representative day	8,492	7,343	6,155	469	367	202	4	33	113	1,149	1,059	90
Above ground	2,595	2,358	1,337	469	367	86	4	12	83	237	194	43
Below ground	5,897	4,985	4,818	...	...	116	...	21	30	912	865	47
Men 16 years of age and over	8,461	7,312	6,124	469	367	202	4	33	113	1,149	1,059	90
Engineers, firemen, mechanics, etc	672	623	502	46	22	35	...	2	16	49	46	3
Above ground	592	546	426	46	22	34	...	2	16	46	43	3
Below ground	80	77	76	...	...	1	...	...	...	3	3	...
Miners, miners' helpers, quarrymen, and stonecutters	5,764	4,774	3,834	380	318	115	4	30	93	990	922	68
Above ground	867	778	...	380	318	4	4	9	63	89	68	21
Below ground	4,897	3,996	3,834	...	...	111	...	21	30	901	854	47
All other employees	2,025	1,915	1,788	43	27	52	...	1	4	110	91	19
Above ground	1,105	1,003	880	43	27	48	...	1	4	102	83	19
Below ground	920	912	908	...	...	4	...	...	...	8	8	...
Boys under 16 years of age (all above ground)	31	31	31	...	...	...	...	...	...	...	...	...
Number of wage earners employed on the 15th day of each month:												
January	6,742	6,431	5,722	277	273	97	...	55	7	311	300	11
February	6,894	6,578	5,795	342	279	110	...	43	9	316	305	11
March	6,855	6,544	5,658	412	288	117	...	42	27	311	300	11
April	7,085	6,738	5,674	530	322	139	...	20	53	347	338	9
May	7,407	7,015	5,802	646	329	121	2	18	97	392	383	9
June	7,521	7,029	5,763	729	256	150	2	15	114	492	461	31
July	7,501	7,031	5,762	716	245	160	2	11	135	470	450	20
August	7,439	6,865	5,708	670	212	162	2	10	101	574	533	41
September	7,862	7,182	5,988	704	204	172	2	10	102	680	630	50
October	8,031	7,304	6,044	714	215	185	2	23	121	727	671	56
November	7,955	7,174	6,062	606	172	192	...	26	116	781	724	57
December	7,749	6,955	6,020	427	198	180	...	23	107	794	731	63
Land controlled, acres	156,120	107,989	98,167	795	539	3,928	854	1,660	2,046	48,131	44,613	3,518
Owned	132,023	85,329	76,271	757	330	3,623	854	1,660	1,834	46,694	43,702	2,992
Held under lease	24,097	22,660	21,896	38	209	305	...	...	212	1,437	911	526
Mineral land	142,771	96,276	88,611	710	537	3,258	854	860	1,446	46,495	42,982	3,513
Owned	119,641	74,583	67,635	672	330	2,998	854	860	1,234	45,058	42,071	2,987
Held under lease	23,130	21,693	20,976	38	207	260	...	...	212	1,437	911	526
Timber land	2,300	1,580	620	...	...	160	...	800	...	720	720	...
Other land	11,049	10,133	8,936	85	2	510	...	...	600	916	911	5
Primary horsepower	24,440	20,742	16,812	1,217	772	1,201	...	195	545	3,698	3,508	190

---

[1] Includes operators as follows: Clay, 1; marble, 2; mineral pigments, 1; traprock, 2; tungsten, 1.

[2] Includes operators as follows: Antimony, 1; bituminous coal, 3; clay, 3; granite, 1; limestone, 2; marble, 2; molybdenum, 1; tungsten, 2.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

WEST VIRGINIA.

Summary.—The gross value of the products of all mining enterprises in West Virginia in 1909 amounted to $76,287,889. From this amount should be deducted $893,664, the value of natural gas sold by some operators to others who sold it again. This leaves $75,394,225 as the net value of the products and gives West Virginia a rank of third among the states in the value of mining products. Pennsylvania and Illinois were the only states which reported products of greater value. Bituminous coal mining, with products valued at $46,929,592, or 62.2 per cent of the net value of the products of all enterprises, was the leading industry. Of the total value of products of this industry, $39,797,027 represented the value of the coal sold as such, $7,132,392 the value of the coke made at the mines, and $173 the value of all other products. In the production of petroleum and natural gas, the industry next in importance, the net value of products amounted to $27,294,423. The total value of the products for these two industries combined was $74,224,015, or 98.4 per cent of the total for the state.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 798 operators, 465, or 58.3 per cent, were corporations. These corporations reported 93.9 per cent of the total value of products and employed 97.1 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	798	78,404	$76,287,889	$95,599	100.0	100.0	100.0
Individual	114	690	1,017,825	8,928	14.3	0.9	1.3
Firm	208	907	2,109,401	10,141	26.1	1.2	2.8
Corporation	465	76,137	71,633,590	154,051	58.3	97.1	93.9
Other	11	670	1,527,073	138,825	1.4	0.9	2.0
Bituminous coal	307	69,666	46,929,592	152,865	100.0	100.0	100.0
Individnal	24	369	189,091	7,879	7.8	0.5	0.4
Firm	13	448	229,734	17,672	4.2	0.6	0.5
Corporation	270	68,849	46,510,767	172,262	87.9	98.8	99.1
Petroleum and natural gas	442	7,093	26,188,087	63,774	100.0	100.0	100.0
Individual	72	128	687,752	9,552	16.3	1.8	2.4
Firm	183	285	1,779,289	9,723	41.4	4.0	6.3
Corporation	175	6,010	24,190,745	138,233	39.6	84.7	85.8
Other	12	670	1,530,301	127,525	2.7	9.4	5.4

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners employed per enterprise or operating unit. For all industries combined there were 176 enterprises which employed over 100 wage earners each. These enterprises, while they represent but one-fifth of the total number, employed over four-fifths of all the wage earners. Of the 400 enterprises engaged in the production of bituminous coal, 8 employed over 1,000 wage earners each and reported 29.7 per cent of all the wage earners in that industry.

Table 2

	Incorporated.	Unincorporated.
Number of operators	465	333
Number of mines and quarries	646	72
Number of wells	10,711	4,435
Proprietors and firm members, total		909
Number performing manual labor		81
Salaried employees:		
Officers of corporations	385	
Superintendents and managers	873	69
Clerks and other salaried employees	2,120	48
Wage earners, Dec. 15, 1909, or nearest repreeentative day	76,137	2,267
Capital	$203,675,354	$15,791,555
Expenses of operation and development	67,449,083	3,898,548
Salaries—		
Officers of corporations	855,929	
Superintendents and managers	1,274,334	67,354
Clerks and other salaried employees	1,610,212	21,055
Wages	35,057,167	923,569
Royalties and rent of mines	7,144,242	651,930
Taxes	858,400	107,043
Supplies and miscellaneous expenses	20,223,016	1,659,716
Cost of natural gas purchased and resold	425,783	467,881
Value of products	71,633,590	4,654,299

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	891	100.0	78,404	100.0
No wage earners	25	2.8		
Contract work and part-time employees	155	17.4		
1 to 5	225	25.3	447	0.6
6 to 20	104	11.7	1,189	1.5
21 to 50	98	11.0	3,442	4.4
51 to 100	108	12.1	7,889	10.1
101 to 500	157	17.6	33,203	42.3
501 to 1,000	10	1.1	6,948	8.9
Over 1,000	9	1.0	25,286	32.3
Bituminous coal	400	100.0	69,666	100.0
Contract work	2	0.5		
1 to 5	18	4.5	58	0.1
6 to 20	39	9.8	489	0.7
21 to 50	77	19.3	2,780	4.0
51 to 100	94	23.5	6,868	9.9
101 to 500	153	38.3	32,432	46.6
501 to 1,000	9	2.3	6,375	9.2
Over 1,000	8	2.0	20,664	29.7
Petroleum and natural gas	442	100.0	7,093	100.0
No wage earners	25	5.7		
Contract work and part-time employees	153	34.6		
1 to 5	194	43.9	353	5.0
6 to 20	49	11.1	541	7.6
21 to 50	11	2.5	325	4.6
51 to 100	6	1.4	452	6.4
Over 100	4	0.9	5,422	76.4

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

For all industries combined and in the production of bituminous coal over three-fourths of the wage earners were employed in enterprises where a day of 10 hours prevailed.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	[1] 445	100.0	100.0
8 hours and under	42	9.4	3.2
9 hours	88	19.8	19.3
10 hours	315	70.8	77.6
Bituminous coal	396	100.0	100.0
8 hours and under	41	10.4	3.2
9 hours	79	19.9	19.6
10 hours	276	69.7	77.2

[1] Exclusive of petroleum and natural gas and 2 bituminous coal mines for which number of hours was not reported.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact, the combined value of products for the manufacturing and mining industries in West Virginia involves a duplication of $7,181,062.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in producing enterprises was 416,282, of which 410,230 horsepower was developed by engines and water wheels owned by the enterprises using them, and 6,502 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	All other.
Primary power:					
Aggregate horsepower	416,282	155,576	256,138	2,796	1,772
Owned	410,230	149,971	256,108	2,489	1,662
Steam engines—					
Number	8,014	1,114	6,833	24	43
Horsepower	327,310	149,815	173,374	2,489	1,632
Gas or gasoline engines—					
Number	3,349	20	3,328	......	1
Horsepower	82,910	146	82,734	......	30
Water wheels—					
Number	2	2	......	......	......
Horsepower	10	10	......	......	......
Electric motors operated by purchased current—					
Number	233	222	1	6	4
Horsepower	6,052	5,605	30	307	110
Electric motors run by current generated by enterprise using:					
Number	2,603	2,232	371	......	......
Horsepower	89,014	81,598	7,416	......	......

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of the mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.[1]
Wages and salaries	$38,177,028	$19,905,757	91.8
Supplies and materials	$12,801,951	$8,513,767	50.4
Royalties and rent of mines	$7,796,597	$3,874,780	101.2
Contract work	[2] $4,307,288	$5,194,279	−17.1
Value of products	$73,452,935	$48,362,664	51.8
Primary horsepower	417,282	240,170	73.7

[1] A minus sign (—) denotes decrease.

[2] Exclusive of wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.							Nonproducing mines, quarries, and wells.[2]
		Total.	Bituminous coal.	Petroleum and natural gas.	Limestone.	Sandstone.	Clay (sold as such).	All other.[1]	
Number of operators	815	798	307	442	12	27	3	7	17
Number of mines, quarries, and wells	15,884	15,864	661	15,146	13	33	4	7	20
Capital [3]	$221,659,945	$219,466,909	$148,802,294	$68,811,344	$1,385,323	$281,152	$88,609	$98,187	$2,193,036
Expenses of operation and development	**$71,658,910**	**$71,347,631**	**$45,469,759**	**$25,005,078**	**$617,643**	**$188,788**	**$29,682**	**$36,681**	**$311,279**
Services—									
Salaried officers of corporations, superintendents, and managers	$2,202,851	$2,197,617	$1,596,534	$575,599	$11,947	$11,267	$1,370	$900	$5,234
Clerks and other salaried employees	$1,639,305	$1,631,267	$1,408,251	$214,726	$4,863	$2,520	$537	$370	$8,038
Wage earners	$36,026,592	$35,980,736	$30,995,703	$4,397,975	$402,674	$141,901	$13,885	$28,598	$45,856
Miscellaneous—									
Supplies	$11,758,558	$11,647,711	$5,138,803	$6,334,336	$143,226	$17,822	$10,505	$3,019	$110,847
Cost of natural gas purchased and resold	$893,664	$893,664	......	$893,664	......	......	......	......	......
Fuel and rent of power	$1,213,029	$1,212,825	$707,151	$449,963	$46,986	$5,329	$1,331	$2,065	$204
Royalties and rent of mines	$7,806,428	$7,796,172	$2,870,850	$4,921,805	$1,323	$1,514	......	$680	$10,256
Taxes	$971,405	$965,443	$485,161	$476,343	$1,875	$1,256	$406	$402	$5,962
Contract work	$4,576,543	$4,465,926	$62,279	$4,403,647	......	......	......	......	$110,617
Rent of offices and other sundry expenses	$4,670,535	$4,656,270	$2,205,027	$2,337,020	$4,749	$7,179	$1,648	$647	$14,265
Value of products	**$76,087,869**	**$76,087,869**	**$46,929,592**	**$28,188,067**	**$635,498**	**$243,435**	**$37,765**	**$53,512**	......
Persons engaged in industry	**83,062**	**82,808**	**72,477**	**8,606**	**1,149**	**437**	**42**	**97**	**254**
Proprietors and officials	2,257	2,236	1,038	1,129	20	37	4	8	21
Proprietors and firm members	918	909	59	807	7	28	2	6	9
Number performing manual labor	81	81	12	56	......	10	1	2	......
Salaried officers of corporations	390	385	287	92	4	1	1	......	5
Superintendents and managers	949	942	692	230	9	8	1	2	7
Clerks and other salaried employees	2,180	2,168	1,773	384	4	4	2	1	12
Wage earners, Dec. 15, 1909, or nearest representative day	78,625	78,404	69,666	7,093	1,125	396	36	88	221
Above ground	23,904	23,755	15,034	7,093	1,125	396	19	88	149
Below ground	54,721	54,649	54,632	......	......	......	17	......	72
Men 16 years of age and over	77,777	77,556	68,829	7,093	1,116	394	36	88	221
Engineers, firemen, mechanics, etc	9,885	9,826	4,285	5,462	34	38	2	5	59
Above ground	9,035	8,976	3,435	5,462	34	38	2	5	59
Below ground	850	850	850	......	......	......	......	......	......
Miners, miners' helpers, quarrymen, and stonecutters	42,248	42,154	40,710	......	1,063	279	28	74	94
Above ground	1,449	1,427	......	......	1,063	279	11	74	22
Below ground	40,799	40,727	40,710	......	......	......	17	......	72
All other employees	25,644	25,576	23,834	1,631	19	77	6	9	68
Above ground	13,295	13,227	11,485	1,631	19	77	6	9	68
Below ground	12,349	12,349	12,349	......	......	......	......	......	......
Boys under 16 years of age [4]	848	848	837	......	9	2	......	......	......
Number of wage earners employed on the 15th day of each month:									
January	71,133	71,133	63,980	6,191	675	199	29	59	......
February	70,622	70,622	63,461	6,152	707	206	31	65	......
March	70,300	70,300	62,932	6,276	742	237	31	82	......
April	71,243	71,241	63,308	6,417	1,126	284	30	76	2
May	71,120	71,118	62,983	6,590	1,123	316	30	76	2
June	72,301	72,297	63,906	6,826	1,097	353	33	82	4
July	72,571	72,499	64,080	6,861	1,093	353	32	80	72
August	74,029	73,951	65,276	7,072	1,147	334	30	92	78
September	75,874	75,758	66,965	7,106	1,189	375	32	91	116
October	76,638	76,483	67,704	7,054	1,191	417	33	84	155
November	78,328	78,160	69,161	7,401	1,096	391	35	76	168
December	77,528	77,369	68,986	7,087	822	366	36	72	159
Land controlled, acres	**5,599,794**	**5,569,353**	**1,176,860**	**4,387,632**	**1,795**	**1,946**	**487**	**633**	**30,441**
Owned	644,804	636,840	611,023	22,298	1,678	969	487	385	7,964
Held under lease	4,954,990	4,932,513	565,837	4,365,334	117	977	......	248	22,477
Mineral and oil land	5,556,577	5,526,703	1,134,485	4,387,632	1,520	1,946	487	633	29,874
Owned	616,427	608,805	583,263	22,298	1,403	969	487	385	7,622
Held under lease	4,940,150	4,917,898	551,222	4,365,334	117	977	......	248	22,252
Timber land	13,435	13,435	13,435	......	......	......	......	......	......
Other land	29,782	29,215	28,940	......	275	......	......	......	567
Primary horsepower	**417,409**	**416,282**	**155,576**	**256,138**	**2,796**	**973**	**418**	**381**	**1,127**

---

[1] Includes operators as follows: Asphaltum and bituminous rock, 1; bluestone, 2; grindstones, 2; iron, 1; marble, 1.

[2] Includes operators as follows: Bituminous coal, 6; grindstones, 1; limestone 1; marble, 1; petroleum and natural gas, 8.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In the bituminous coal industry 723 boys were employed below ground.

WISCONSIN.

Summary.—The gross value of the products of all mines and quarries in Wisconsin in 1909 was $7,459,404. Deducting from this amount, $156,000, the value of lead and zinc ore produced by some operators and used as material by others, leaves $7,303,404 as the net value of the products. The principal industries were the production of iron ore and lead and zinc. The value of the products of these two industries, after deducting the ore purchased by the lead and zinc mines, was $4,806,491, or 65.8 per cent of the net value of all products. Granite quarrying, the industry next in importance, reported products valued at $1,433,105.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	268	6,083	$7,459,404	$27,834	100.0	100.0	100.0
Individual	113	558	378,481	3,349	42.2	9.2	5.1
Firm	41	455	387,042	9,440	15.3	7.5	5.2
Corporation	114	5,070	6,693,881	58,718	42.5	83.3	89.7
Lead and zinc	88	1,753	1,989,907	22,613	100.0	100.0	100.0
Individual	5	39	51,408	10,282	5.7	2.2	2.6
Firm	16	161	162,865	10,179	18.2	9.2	8.2
Corporation	67	1,553	1,775,634	26,502	76.1	88.6	89.2

Table 2

	Incorporated.	Unincorporated.
Number of operators	114	154
Number of mines and quarries	126	160
Proprietors and firm members, total	....	216
Number performing manual labor	....	104
Salaried employees:		
Officers of corporations	54	....
Superintendents and managers	108	8
Clerks and other salaried employees	88	10
Wage earners, Dec. 15, 1909, or nearest representative day	5,070	1,013
Capital	$10,733,215	$927,616
Expenses of operation and development	4,982,798	525,953
Salaries—		
Officers of corporations	48,650	....
Superintendents and managers	131,082	6,992
Clerks and other salaried employees	67,089	4,659
Wages	2,705,090	376,269
Royalties and rent of mines	416,969	28,177
Taxes	59,537	3,218
Supplies and miscellaneous expenses	1,398,381	106,638
Cost of ore purchased	156,000	....
Value of products	6,693,881	765,523

Out of a total of 268 operators, 114, or 42.5 per cent. were corporations. These corporations reported 89.7 per cent of the total value of products and employed 83.3 per cent of all wage earners. In the iron-ore industry all enterprises were conducted by corporations.

Size of enterprises.—In Table 3 the producing enterprises are classified according to the number of wage earners employed per enterprise or operating unit. Of the 269 enterprises reported, only 11 employed over 100 wage earners each. These enterprises, however, employed 39.4 per cent of all wage earners. In the production of iron ore the 4 enterprises reporting over 100 wage earners each, employed 86.7 per cent of the wage earners engaged in that industry.

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	269	100.0	6,083	100.0
No wage earners	23	8.6	....	....
1 to 5	94	35.0	218	3.6
6 to 20	82	30.5	1,116	18.3
21 to 50	45	16.7	1,400	23.0
51 to 100	14	5.2	952	15.7
Over 100	11	4.1	2,397	39.4
Iron	7	100.0	1,455	100.0
21 to 100	3	42.9	193	13.3
Over 100	4	57.1	1,262	86.7
Lead and zinc	88	100.0	1,753	100.0
No wage earners	3	3.4	....	....
1 to 5	13	14.8	43	2.5
6 to 20	40	45.5	554	31.6
21 to 50	27	30.7	826	47.1
Over 50	5	5.7	330	18.8

Persons employed in mining.—While iron mining was the leading industry in 1909, when measured by the value of products, the building stone quarries, producing granite, limestone, and sandstone, rank first when the number of persons employed is considered. Out of a total of 6,567 persons employed in the producing mines, 3,116, or 47.4 per cent, were employed in the stone industry, and only 1,517, or 23.1 per cent, in the iron industry.

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise.

The table shows a marked difference in the number of hours persons are employed in the different mining industries. In the lead and zinc mines, in 65 per cent of the enterprises weighted according to the number of wage earners, a day of 8 hours prevailed, while for all industries combined the corresponding per cent was only 23.5.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	246	100.0	100.0
8 hours	80	32.5	23.5
9 hours	41	16.7	20.8
10 hours	125	50.8	55.7
Lead and zinc	85	100.0	100.0
8 hours	61	71.8	65.0
9 hours	22	25.9	32.3
10 hours	2	2.4	2.8

Engines and power.—As shown by Table 5, the aggregate horsepower employed in all producing enterprises was 24,864.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Iron.	Lead and zinc.	Building stone.[1]	All other.
Primary power:					
Aggregate horsepower	**24,864**	**8,975**	**8,757**	**6,581**	**551**
Owned	24,346	8,975	8,697	6,123	551
Steam engines—					
Number	404	122	148	133	1
Horsepower	22,028	8,959	7,542	5,457	70
Gas or gasoline engines—					
Number	75	2	57	14	2
Horsepower	1,413	16	1,155	226	16
Water wheels—					
Number	6	......	......	4	2
Horsepower	905	......	......	440	465
Electric motors operated by purchased current—					
Number	16	......	2	14	......
Horsepower	518	......	60	458	......
Electric motors run by current generated by enterprise using:					
Number	72	1	63	8	......
Horsepower	1,207	8	664	235	......

[1] Includes granite, limestone, and sandstone.

Comparison of mining industries: 1902–1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions, and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909. Such items as are comparable for the two years are presented in Table 6.

The most marked increase in the value of products was in the lead and zinc industry, where the increase was from $473,652 in 1902 to $1,833,907 in 1909. Other noticeable increases were in the production of iron ore, the value of which increased from $1,800,864 in 1902 to $2,972,584 in 1909, and in the production of granite, the value of which increased from $369,137 in 1902 to $1,433,105 in 1909.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Wages and salaries	$3,839,877	$2,145,491	79.0
Supplies and materials	$1,664,543	$787,253	111.4
Royalties and rent of mines	$445,191	$240,110	85.4
Contract work	[1] $39,020	$3,758	938.3
Value of products	$8,575,402	$4,257,685	101.4
Primary horsepower	26,848	12,011	123.5

[1] Exclusive of amount paid to miners compensated by a share of the product, which is included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Wisconsin involves a duplication of $1,423,837. Of this amount, $1,272,574 represents the value of granite duplicated, $91,297 the value of limestone, and $40,000 the value of sandstone, while quartz and graphite constitute the remainder of the duplication ($19,966).

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES AND QUARRIES.							Nonproducing mines and quarries.[2]
		Total.	Iron.	Lead and zinc.	Granite.	Limestone.	Sandstone.	All other.[1]	
Number of operators	290	268	6	88	21	110	39	4	22
Number of mines and quarries	308	286	11	89	23	118	41	4	22
Capital[3]	$13,042,748	$11,660,731	$3,979,729	$4,656,607	$1,078,516	$1,554,276	$319,454	$72,149	$1,382,017
Expenses of operation and development	$5,614,672	$5,508,751	$1,798,595	$1,616,103	$1,287,914	$646,729	$140,762	$18,648	$105,921
Services—									
Salaried officers of corporations, superintendents, and managers	$196,843	$186,724	$29,215	$72,173	$43,675	$26,512	$13,949	$1,200	$10,119
Clerks and other salaried employees	$74,460	$71,748	$41,306	$8,643	$7,635	$11,705	$1,440	$1,019	$2,712
Wage earners	$3,128,028	$3,081,359	$870,977	$714,735	$979,038	$423,661	$84,278	$8,670	$46,669
Miscellaneous—									
Supplies	$736,724	$721,925	$310,027	$190,137	$120,688	$79,211	$19,266	$2,596	$14,799
Cost of ore purchased	$156,000	$156,000	....	$156,000	....	....	....	....	....
Fuel and rent of power	$458,047	$435,993	$132,155	$213,823	$36,963	$45,299	$6,494	$1,259	$22,054
Royalties and rent of mines	$445,186	$445,146	$269,872	$160,484	$7,929	$5,286	$1,575	....	$40
Taxes	$63,691	$62,755	$46,710	$4,308	$6,225	$3,864	$1,078	$570	$936
Contract work	$45,361	$40,957	$20,600	$14,630	$4,218	$1,405	$204	....	$4,404
Rent of offices and other sundry expenses	$310,332	$306,144	$77,733	$81,270	$81,543	$49,786	$12,478	$3,334	$4,188
Value of products	$7,459,404	$7,459,404	$2,872,584	$1,989,907	$1,433,105	$842,116	$200,236	$21,456	....
Persons engaged in industry	6,786	6,567	1,517	1,906	1,499	1,268	349	28	219
Proprietors and officials	416	386	18	138	39	137	48	6	30
Proprietors and firm members	232	216	....	50	14	111	36	5	16
Number performing manual labor	107	104	....	24	6	56	18	1	3
Salaried officers of corporations	57	54	2	28	9	9	6	....	3
Superintendents and managers	127	116	16	60	16	17	6	1	11
Clerks and other salaried employees	105	98	44	15	12	20	4	3	7
Wage earners, Dec. 15, 1909, or nearest representative day	6,265	6,083	1,455	1,753	1,448	1,111	297	19	182
Above ground	3,902	3,832	412	550	1,448	1,111	297	14	70
Below ground	2,363	2,251	1,043	1,203	....	....	....	5	112
Men 16 years of age and over	6,259	6,077	1,455	1,753	1,448	1,105	297	19	182
Engineers, firemen, mechanics, etc	674	610	150	293	79	69	18	1	64
Above ground	634	585	132	286	79	69	18	1	49
Below ground	40	25	18	7	....	....	....	....	15
Miners, miners' helpers, quarrymen, and stonecutters	3,972	3,872	871	1,215	775	793	211	7	100
Above ground	1,931	1,914	70	63	775	793	211	2	17
Below ground	2,041	1,958	801	1,152	....	....	....	5	83
All other employees	1,613	1,595	434	245	594	243	68	11	18
Above ground	1,331	1,327	210	201	594	243	68	11	4
Below ground	282	268	224	44	....	....	....	....	14
Boys under 16 years of age (all above ground)	6	6	....	....	....	6	....	....	....
Number of wage earners employed on the 15th day of each month:									
January	3,245	3,194	1,039	967	822	306	63	7	51
February	3,428	3,374	1,266	980	837	220	62	9	54
March	3,901	3,837	1,244	956	1,130	405	95	7	64
April	4,546	4,482	1,149	998	1,359	805	159	12	64
May	4,932	4,860	1,188	1,032	1,443	972	212	13	72
June	5,104	4,994	1,142	1,080	1,436	1,082	237	17	110
July	5,540	5,413	1,268	1,155	1,659	1,162	265	14	127
August	5,495	5,378	1,304	1,125	1,665	1,102	264	18	117
September	5,694	5,597	1,410	1,283	1,595	1,057	233	19	97
October	5,646	5,556	1,369	1,427	1,521	1,007	212	20	90
November	5,315	5,231	1,446	1,356	1,358	902	151	18	64
December	4,689	4,599	1,307	1,436	1,050	660	128	18	90
Land controlled, acres	40,657	38,496	20,394	10,669	2,899	2,690	1,800	44	2,161
Owned	26,260	25,858	17,623	1,544	2,732	2,579	1,376	4	402
Held under lease	14,397	12,638	2,771	9,125	167	111	424	40	1,759
Mineral land	25,057	22,896	8,083	10,445	719	2,133	1,472	44	2,161
Owned	11,872	11,470	6,364	1,480	552	2,022	1,048	4	402
Held under lease	13,185	11,426	1,719	8,965	167	111	424	40	1,759
Timber land	4,313	4,313	4,163	120	....	....	30	....	....
Other land	11,287	11,287	8,148	104	2,180	557	298	....	....
Primary horsepower	26,885	24,864	8,975	8,757	2,512	3,433	636	551	2,021

---

[1] Includes operators as follows: Clay, 1; graphite, 1; pyrite, 1; quartz, 1.
[2] Includes operators as follows: Granite, 1; graphite, 1; iron, 1; lead and zinc, 19.
[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

WYOMING.

Summary.—Bituminous coal mining was the leading industry in Wyoming in 1909. The value of the products of this industry was $9,721,134, which represented 92 per cent of the value of products for all mines and quarries ($10,572,188). In the production of gypsum, the industry next in importance, the value of the products was $132,719.

In the production of petroleum and natural gas the expenses of operation and development exceeded the value of the products. This was due in most part to expenditures for development work resulting in permanent improvements to the mining properties.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated. Out of a total of 66 operators, 44 were corporations. These corporations reported 98.8 per cent of the total value of products and employed 98.4 per cent of all wage earners.

Table 1

INDUSTRY AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries	**66**	**8,499**	**$10,572,188**	**$160,185**	**100.0**	**100.0**	**100.0**
Individual	15	40	54,264	3,618	22.7	0.5	0.5
Firm [1]	7	93	72,492	10,356	10.6	1.1	0.7
Corporation	44	8,366	10,445,432	237,396	66.7	98.4	98.8
Bituminous coal	**39**	**7,839**	**9,721,134**	**249,260**	**100.0**	**100.0**	**100.0**
Unincorporated [2]	10	109	80,924	8,092	25.6	1.4	0.8
Corporation	29	7,730	9,640,210	332,421	74.4	98.6	99.2

[1] Includes 1 cooperative association.
[2] Includes 8 individuals, 1 firm, and 1 cooperative association.

Size of enterprises.—In Table 3 the producing mining enterprises of the state are classified according to the number of wage earners per enterprise or operating unit. In the bituminous coal industry five enterprises employed over 500 wage earners each. These enterprises reported 49.9 per cent of the wage earners employed in all enterprises.

Table 2

	Incorporated.	Unincorporated.
Number of operators	44	22
Number of mines and quarries	67	28
Number of wells	21	....
Proprietors and firm members, total	....	202
Number performing manual labor	....	13
Salaried employees:		
Officers of corporations	24	....
Superintendents and managers	77	3
Clerks and other salaried employees	176	2
Wage earners, Dec. 15, 1909, or nearest representative day	8,366	133
Capital	$9,366,855	$138,510
Expenses of operation and development	8,939,694	113,773
Salaries—		
Officers of corporations	114,027	....
Superintendents and managers	135,608	6,000
Clerks and other salaried employees	190,422	1,350
Wages	6,207,053	59,734
Royalties and rent of mines	102,024	5,810
Taxes	60,860	549
Supplies and miscellaneous expenses	2,129,700	40,330
Value of products	10,445,432	126,756

Table 3

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909		
	Number of enterprises.	Wage earners.	
		Number.	Per cent distribution.
All industries	**70**	**8,499**	**100.0**
No wage earners	5	....	....
Contract work	1	....	....
1 to 5	19	46	0.5
6 to 20	17	136	1.6
21 to 50	7	244	2.9
51 to 100	4	352	4.1
101 to 500	12	3,484	41.0
Over 500	5	4,237	49.9
Bituminous coal	**39**	**7,839**	**100.0**
No wage earners	1	....	....
1 to 5	7	23	0.3
6 to 20	7	65	0.8
21 to 50	4	148	1.9
51 to 100	4	352	4.5
101 to 500	11	3,014	38.4
Over 500	5	4,237	54.1

Prevailing hours of labor.—In Table 4 all producing enterprises, except those employing no wage earners and one operated exclusively by contract work, have been classified according to the prevailing hours of labor per day in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table, because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable.

The table shows the per cent distribution in which each enterprise has been given a weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since, in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. A day of eight hours generally prevailed in all the mining enterprises of the state.

Table 4

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909	
	Number of enterprises.	Per cent distribution of enterprises weighted according to number of wage earners.
All industries[1]	58	100.0
8 hours	43	93.2
9 hours	3	0.1
10 hours	11	6.3
12 hours	1	0.4
Bituminous coal	38	100.0
8 hours	33	99.5
9 hours	2	0.1
10 hours	3	0.5

[1] Exclusive of petroleum and natural gas.

Engines and power.—As shown by Table 5, the aggregate horsepower employed in the producing enterprises in 1909 was 30,338, of which 29,713 was developed by engines and water wheels owned by enterprises using them and 625 by electric motors operated by purchased current.

Table 5

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Bituminous coal.	Petroleum and natural gas.	Gypsum.	All other.
Primary power:					
Aggregate horsepower	**30,338**	**28,071**	**285**	**325**	**1,657**
Owned	29,713	27,446	285	325	1,657
Steam engines—					
Number	202	172	10	2	18
Horsepower	29,600	27,356	273	325	1,646
Gas or gasoline engines—					
Number	7	2	3		2
Horsepower	113	90	12		11
Electric motors operated by purchased current—					
Number	8	8			
Horsepower	625	625			
Electric motors run by current generated by enterprise using:					
Number	87	79			8
Horsepower	2,474	2,461			13

Comparison of mining industries: 1902–1909.—Table 6 presents for 1909 and 1902 such data as are comparable for the two years.

Table 6

	PRODUCING ENTERPRISES.		
	1909	1902[1]	Per cent of increase.
Wages and salaries	$6,714,194	$3,620,675	85.4
Supplies and materials	$1,761,781	$818,496	115.2
Royalties and rent of mines	$107,834	$95,222	13.2
Contract work	[2] $48,151	$15,547	209.7
Value of products	$10,572,188	$5,684,286	86.0
Primary horsepower	30,338	18,096	67.7

[1] Includes statistics for the production of lime, which are omitted from the figures for 1909.

[2] Exclusive of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In the sandstone and gypsum industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and for mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Wyoming involves a duplication of $135,239.

DETAILED STATISTICS FOR MINING INDUSTRIES: 1909.

Table 7	Aggregate.	PRODUCING MINES, QUARRIES, AND WELLS.							Nonproducing mines, quarries, and wells.[2]
		Total.	Bituminous coal.	Petroleum and natural gas.	Gypsum.	Sandstone.	Limestone.	All other.[1]	
Number of operators	126	66	35	7	3	6	3	12	60
Number of mines, quarries, and wells	405	116	65	21	3	7	3	17	289
Capital[3]	$12,663,868	$9,505,365	$7,609,229	$648,000	$218,652	$15,650	$5,310	$1,108,524	$3,158,503
Expenses of operation and development	**$9,448,025**	**$9,053,467**	**$8,146,526**	**$156,661**	**$114,919**	**$16,461**	**$16,724**	**$602,176**	**$394,558**
Services—									
Salaried officers of corporations, superintendents, and managers	$329,140	$255,635	$230,615	$1,800	$4,900	....	....	$18,320	$73,505
Clerks and other salaried employees	$197,923	$191,772	$180,954	$1,500	$3,638	....	....	$5,680	$6,151
Wage earners	$6,427,266	$6,266,787	$5,808,248	$11,150	$40,053	$13,876	$60	$393,400	$160,479
Miscellaneous—									
Supplies	$1,465,331	$1,385,594	$1,127,634	$108,246	$21,309	$1,920	$9	$126,476	$79,737
Fuel and rent of power	$396,444	$376,187	$307,831	$3,265	$23,378	$50	....	$41,663	$20,257
Royalties and rent of mines	$108,334	$107,834	$104,908	$331	....	$140	$2,455	....	$500
Taxes	$63,701	$61,409	$55,969	$284	$258	$245	....	$4,653	$2,292
Contract work	$80,967	$61,542	$10,644	$28,391	$438	....	$14,000	$8,069	$19,425
Rent of offices and other sundry expenses	$378,919	$346,707	$319,723	$1,694	$20,945	$230	$200	$3,915	$32,212
Value of products	**$10,573,188**	**$10,573,188**	**$9,721,134**	**$18,829**	**$132,719**	**$22,856**	**$21,700**	**$654,851**	....
Persons engaged in industry	9,357	8,983	8,267	31	52	29	6	598	374
Proprietors and officials	374	306	272	3	4	7	4	16	68
Proprietors and firm members	229	202	185	....	....	7	4	6	27
Number performing manual labor	26	13	4	....	....	2	2	5	13
Salaried officers of corporations	39	24	24	....	....	....	....	....	15
Superintendents and managers	106	80	63	3	4	....	....	10	26
Clerks and other salaried employees	189	178	156	4	5	....	....	13	11
Wage earners, Dec. 15, 1909, or nearest representative day	8,794	8,499	7,839	24	43	22	2	569	295
Above ground	1,841	1,726	1,278	24	43	22	2	357	115
Below ground	6,953	6,773	6,561	....	....	....	....	212	180
Men 16 years of age and over	8,789	8,494	7,834	24	43	22	2	569	295
Engineers, firemen, mechanics, etc	596	541	455	17	....	....	....	69	55
Above ground	539	487	407	17	....	....	....	63	52
Below ground	57	54	48	....	....	....	....	6	3
Miners, miners' helpers, and quarrymen	5,680	5,482	5,054	....	....	14	2	412	198
Above ground	260	230	....	....	....	14	2	214	30
Below ground	5,420	5,252	5,054	....	....	....	....	198	168
All other employees	2,513	2,471	2,325	7	43	8	....	88	42
Above ground	1,039	1,006	868	7	43	8	....	80	33
Below ground	1,474	1,465	1,457	....	....	....	....	8	9
Boys under 16 years of age[4]	5	5	5	....	....	....	....	....	....
Number of wage earners employed on the 15th day of each month:									
January	8,360	8,249	7,726	8	28	21	1	465	111
February	8,301	8,188	7,620	11	39	25	....	493	113
March	7,931	7,833	7,265	11	34	24	....	499	98
April	7,673	7,559	6,956	18	46	27	1	511	114
May	7,498	7,357	6,764	17	55	26	....	496	141
June	7,481	7,315	6,699	24	59	28	1	504	166
July	7,388	7,191	6,563	25	53	25	....	526	197
August	7,430	7,223	6,593	10	61	8	....	551	207
September	7,751	7,529	6,898	7	66	25	....	533	222
October	8,060	7,852	7,200	7	67	18	....	560	208
November	8,323	8,163	7,504	7	60	15	....	577	160
December	8,601	8,445	7,825	9	43	....	....	568	156
Land controlled, acres	260,844	85,550	70,908	6,150	313	1,447	130	6,602	175,294
Owned	82,497	64,973	55,744	3,230	50	467	80	5,402	17,524
Held under lease	178,347	20,577	15,164	2,920	263	980	50	1,200	157,770
Mineral and oil land	254,153	79,159	64,783	6,150	182	1,427	130	6,487	174,994
Owned	76,342	59,118	50,024	3,230	50	447	80	5,287	17,224
Held under lease	177,811	20,041	14,759	2,920	132	980	50	1,200	157,770
Timber land	220	....	....	....	....	....	....	....	220
Other land	6,471	6,391	6,125	....	131	20	....	115	80
Primary horsepower	31,476	30,338	28,071	285	325	50	....	1,607	1,138

---

[1] Includes operators as follows: Asbestos, 2; chromite, 1; clay, 1; copper, 2; gold and silver, deep mines, 1; iron, 1; marble, 1; mica, 1; phosphate rock, 1; sulphur, 1.

[2] Includes operators as follows: Asbestos, 3; gold and silver, deep mines, 48; petroleum and natural gas, 7; placer gold, 1; precious stones, 1.

[3] Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.

[4] In the bituminous coal industry 2 boys were employed below ground.

CHAPTER IV.

COAL.

INTRODUCTION.

This report is arranged in four parts. Part I treats of the industry as a whole; Part II covers Pennsylvania anthracite; Part III deals with bituminous coal; and Part IV presents a comprehensive summary of the general statistics obtained by the census of coal mines, from which the special tables of Parts I, II, and III are derived.

Definitions and explanations.—In order that the text and tables of this report may be entirely clear, the following definitions and explanations are submitted:

Scope of census.—The statistics of coal refer to the United States exclusive of all outlying possessions. The Thirteenth Census did not extend to the Philippine Islands, and in the other noncontiguous territory of the United States no coal was mined, except in Alaska, where five producing mines reported an output of 3,464 tons, valued at $16,450. Owing to the incompleteness of the reports, no other data can be given for the Alaskan coal mines, and the items just given are not included in any subsequent table or statement.

The census returns cover two general classes of operations: First, those which produced coal during the year 1909, and second, those which were in course of development but did not produce coal during that year. The tables of Parts I, II, and III deal with producing enterprises only; the statistics of nonproducing mines are given in the detailed table in Part IV.

Small bituminous mines producing less than 1,000 tons each and mines idle during the entire year 1909 were omitted from the census.

Period covered.—The returns of all anthracite producers cover the calendar year 1909. Those of bituminous producers cover the calendar year 1909, or the business year which corresponded most nearly to that calendar year. This gives a report of a full year's operations for all mines except those which were shut down during a portion of the year, in which case, of course, the returns cover only a part of a year's operations.

Coal mining and coke manufacture at the mines.—Many bituminous mines are operated directly in connection with coke manufacture at the mines. It was the intention in such cases to secure separate reports for coal mining and for coke making. Many operators, however, did not segregate their reports, but rendered one combined report for both enterprises, on the ground that these activities were so closely related as to render separate reports difficult and possibly inaccurate. In view of this condition of the returns, the statistics of bituminous coal mining have in general been arranged in two groups: First, statistics which relate solely to mines at which no coke was made; second, statistics which cover all those enterprises where both operations were conducted. This is done, not only to secure greater accuracy, but to give figures which reflect the actual conditions of operation for the industry. In order to present data comparable with those of preceding census reports, figures are presented in a few tables for all mines as mines, the data having been adjusted, as explained in connection with the tables, to exclude the items attributable to the manufacture of coke.

In the statistics for enterprises engaged both in coal mining and in coke making there is a certain unavoidable lack of uniformity. It was intended to have these figures cover only mines at which coke was made during the year 1909, but occasionally an operator rendered a single combined report covering several mines, one or more of which were operated with coke production and one or more without coke production; hence a few mines without coke ovens were necessarily included in the statistics of the coke-making group.

In each of the three states, Illinois, Indiana, and Ohio, a single operator made coke at a mine, but the entire quantity produced in these states was too small to justify separate presentation, and it has not been included in any part of this report.

Number of operators.—In determining the number of operators, subsidiary companies have not been considered separate operators, but each holding or owning company, together with all its subsidiary concerns, has been counted as one operator.

Coal land controlled.—The acreage of coal land shown covers the holdings of none but operating concerns, and therefore is exclusive of the lands of nonoperating holders. Since producers reported their total holdings, the acreage given necessarily includes large areas held in reserve for future development.

Pennsylvania anthracite operators reported 10,975 acres of coal land sublet to each other, which was reported twice in the total holdings reported by all operators. This duplication has been eliminated from the total acreage shown for Pennsylvania anthracite, but can not be eliminated from the subtotals given for owned and leased acreage, since the lessors did not report the form of tenure by which they controlled the land reported sublet.

Capital.—Operators were required to report the total amount of capital, both owned and borrowed, which they had invested in the business on the last day of the business year. This includes the operator's investment in property owned, together with cash on hand, operating accounts, and bills receivable. The value of lands, buildings, and equipment held under lease is not included in the amount reported, but the capital reported does cover the value of the leases themselves. Owing to diverse methods of bookkeeping in use by different companies, to the fact that some operators apparently reported capital stock at its par value instead of actual capital invested, and to the further fact that in some cases the returns include investments in large areas of reserve coal lands, the statistics of capital lack uniformity and can be used only to show very general conditions.

Expenses.—The expenses reported include all direct expenses of operation and development. Interest payments and dividend disbursements are not included, nor has any allowance been made for depreciation. In coal mining, depreciation is of two kinds: (1) The gradual destruction of the investment in coal lands, due to the mining out of the coal; (2) the gradual destruction of the investment in the development of the mine, due not only to the deterioration of inside and outside equipment and construction, but also to the fact that shafts, slopes, entries, etc., have no value after the coal is exhausted. Depreciation of the first kind, for mines operated on leased lands, is fully covered in the census returns by the royalties paid and included in the expenses reported by the operators; but for mines operated on lands owned by the operators it is not covered by any item in the expenses reported to the census. For the second kind of depreciation no allowance as such has been included in the expenses reported, but it should be borne in mind that the mine operators did include expenditures for permanent improvements, betterments, and replacements made during the year, which may offset the depreciation of this second kind. The total amount thus expended and included in the total expenses reported by anthracite operators was $6,060,000. Bituminous operators reported a total of $14,152,000 for "cost of development work," but many operators carried no separate account of such expenditures, nor was there uniformity of method among those who did. Accordingly, the amount actually expended at bituminous mines for this purpose may have been considerably greater than the above total.

Both gross and net expenses are shown for anthracite. The gross expenses given involve a certain amount of duplication, as explained in the paragraph on "Wages."

Salaries.—Except as explained in the following paragraph on "Administrative expenses of general offices," the amount of salaries shown includes all payments to officials, superintendents, managers, and salaried employees in general offices, as well as the payments to salaried employees at the mines.

Administrative expenses of general offices.—Occasionally a company operating bituminous mines in more than one state reported as a total the expenses of its general office and did not apportion these expenses among its different mines or even among the different states covered by its operations. States affected by returns of this kind from bituminous mine operators were Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Ohio, Oklahoma, Pennsylvania, Texas, Washington, West Virginia, and Wyoming. In order to show the total expenses for the mines of the states mentioned it was necessary to distribute these administrative expenses among these states by estimate. It was not thought desirable, however, to include under the heading of "Salaries" the salary payments thus distributed, since the employees of general offices to whom these salaries were paid could not be similarly distributed by states. Accordingly, the distribution was made as follows: The total expenses of each general office were apportioned as a single item among the mines of that company in the proportion which the total expenses as separately reported for each mine bore to the aggregate for all the mines of the company, and the amount so assigned to each mine was included in "Miscellaneous expenses." In consequence, the total amount of salaries appearing as such in the statistics of bituminous coal for the several states mentioned is slightly less than it should be, while the total for miscellaneous expenses is correspondingly exaggerated. However, these apportioned items are relatively small, so that the items for each state are approximately correct, and, in the totals for the United States, the general office employees, their salaries, and other general office expenditures, are included under the proper headings. The condition herein noted applies only to the statistics of bituminous coal in tables of Part III and Part IV.

Wages.—The wages shown in the tables of this report for the year 1909 are the gross earnings of the men. The census schedule of inquiries for mines called for the amount of net wages; that is, the amount remaining after deductions had been made from gross earnings on account of blacksmithing, explosives, oil, etc., furnished the employees by the operators, and also called for the amount of such deductions made. Deductions aggregating $12,108,000 were reported by bituminous operators, but examination of the returns showed that the practice as to entries under this heading, and consequently as to the reporting of net wages, was not uniform. It was evident that uniform data for wages at bituminous mines could be secured only by using gross earnings, and this figure was obtained, where not directly given, by adding together the net wages and the amount of deductions reported, which gave the original gross earnings. For the sake of uniformity the returns of anthracite operators were treated in the same manner, and hence gross earnings constitute the "Wages" shown in all the tables of this report. However, the total gross expenses thus obtained for anthracite mines involve a certain amount of duplication, due to the fact that the cost of explosives and oil afterwards sold to employees for mining purposes is included in the cost of supplies reported by the operators, while at the same time the wages shown are the gross earnings of the men before any deductions had been made for these supplies. In order to eliminate this duplication, the amount deducted by the operators from the gross earnings of their employees on this account, namely, $4,872,913, has been subtracted from the gross expenses to give net expenses.

Supplies.—This item includes the cost of all mine supplies used during the year, of fuel charged to operating expenses, and of power rented. In addition to the coal used at the mines and charged to operating expenses, a quantity—some of it refuse—was burned under the boilers; to this coal no value was assigned by the operators. The cost of supplies given does not include any estimated value for this coal.

The cost of supplies reported by anthracite operators includes the cost of mining supplies afterwards sold to employees, with deduction from wages in payment therefor. There is thus a duplication in gross expenses, which has been eliminated in the item of net expenses shown in the tables. To a slight extent, a similar condition exists in the returns of bituminous operators, as explained in connection with Table 51.

In the statistics of mines at which coke was manufactured, the value of coal charged into the ovens has not been included in the cost of supplies, except in the case of a small quantity purchased from other operators, nor has the value of the coal made into coke been included in the total value of products. Duplication of expenses and of value of products is thus avoided.

Miscellaneous expenses.—Except as already explained under "Administrative expenses of general offices," the figures for miscellaneous expenses include taxes, cost of contract work, rent of offices, use of patents, insurance, ordinary repairs to buildings and machinery, advertising, damages, traveling expenses, and all other sundry expenses.

Use of long and short tons.—In all the tables of Part I, Part III, and Part IV, the quantities of anthracite and bituminous coal and of coke are given in tons of 2,000 pounds; but in all the tables of Part II, which deals with Pennsylvania anthracite, the long ton of 2,240 pounds is used.

Value of products.—The schedules called for the value of the products at the mines. However, the value reported was not always the actual value which would have resulted from sale in the open market, since a considerable part of the output of coal and coke was produced by operators closely affiliated with various industrial enterprises, and the value reported by such operators may have been a matter of intercorporate accounting rather than an expression of market value. Furthermore, the total value of products reported includes the value of that portion of the coal used at the mines for steam and heat to which a value was assigned by the operators and which was charged to operating expenses, but not all operators assign a value to such coal.

The total value of products for coal mining combined with coke manufacture has been obtained by adding together the value of coal sold, or used for fuel in other departments of the producing concerns, of coal used at the mines for steam and heat and charged to operating expenses, and of coke produced, together with the value of all by-products. This excludes the value of the coal coked at the mines, and avoids duplication of value of products.

Persons engaged in the industry.—The statistics of the number of proprietors and firm members, salaried employees, and wage earners are based on the returns for December 15, 1909, or the nearest representative day. The number of wage earners reported includes bosses performing work similar to that of men over whom they had charge, but foremen whose duties were wholly supervisory are included among salaried employees.

Primary horsepower.—The figures given under this heading represent the total primary power used by the operators. The horsepower of electric motors run by current generated by the primary power of the mine operators is not included, since this would obviously result in duplication.

PART I.—THE INDUSTRY AS A WHOLE.

GENERAL SUMMARY FOR THE UNITED STATES.

Table 1 summarizes the more important statistics of producing coal mines in 1909 for the entire United States. It relates only to mines which reported in full all the important items requested; a few other mines with a small production of coal (about 2,000,000 tons), which did not furnish full statistics as to value, expenses, or some other items, or were operated by penal institutions, are not included in this table.[1]

SUMMARY FOR PRODUCING MINES: 1909.

[Statistics of nonproducing mines are given only in Table 62.]

Table 1	Total.	Anthracite.	BITUMINOUS.		
			Total.	Mines without coke manufacture.	Mines with coke manufacture.
Number of operators	3,695	192	3,503	3,322	181
Number of mines	6,436	423	6,013	5,365	648
Acres of coal land controlled	6,847,545	[1] 274,359	6,573,186	4,883,967	1,689,219
Owned	4,732,556	183,144	4,549,412	3,225,778	1,323,634
Held under lease	2,125,964	102,190	2,023,774	1,658,189	365,585
Capital	$1,309,125,161	$246,928,078	$1,062,197,083	$697,357,137	$364,839,946
Gross expenses	[2] $535,231,493	$139,324,467	[2] $395,907,026	$301,451,896	[2] $94,455,130
Less charges to miners for explosives, oil, and blacksmithing	(3)	$4,872,913	(3)	(3)	(3)
Net expenses	$530,358,580	$134,451,554	$395,907,026	$301,451,896	$94,455,130
Products:					
Tons (2,000 pounds)—					
Coal, including that made into coke at mines	457,833,640	80,968,130	376,865,510	280,652,040	96,213,470
Coal, excluding that made into coke at mines	407,761,037	80,968,130	326,792,907	280,652,040	46,140,867
Coke made at mines	32,450,482	....	32,450,482	....	32,450,482
Value at mines of all products	$577,142,935	$149,180,471	$427,962,464	$315,894,935	$112,067,529
Coal for sale or use as fuel	[4] $509,232,811	$149,180,471	[4] $360,052,340	$315,659,346	[4] $44,392,994
Coke made at mines	$67,483,162	....	$67,483,162	....	$67,483,162
Other products	$426,962	....	$426,962	$235,589	$191,373
Persons engaged in industry	770,681	178,004	592,677	453,473	139,204
Proprietors and firm members	3,927	188	3,739	3,648	91
Salaried employees	23,461	4,312	19,149	14,411	4,738
Wage earners (number employed Dec. 15, 1909, or nearest representative day)	743,293	173,504	569,789	435,414	134,375
Primary horsepower	1,904,154	676,753	1,227,401	910,778	316,623
Gross expenses by items:					
Services	$412,898,346	$96,900,963	$315,997,383	$244,595,955	$71,401,428
Salaries	26,384,199	4,583,304	21,800,895	16,501,064	5,299,831
Wages	386,514,147	92,317,659	294,196,488	228,094,891	66,101,597
Supplies	[2] 74,706,613	26,697,966	[2] 48,008,647	34,392,734	[2] 13,615,913
Royalties	20,063,227	7,980,739	12,082,488	9,715,232	2,367,256
Miscellaneous	27,563,307	7,744,799	19,818,508	12,747,975	7,070,533

[1] The total acreage of anthracite land is exclusive of a duplication of 10,975 acres in figures for owned and leased acreage. See page 181.

[2] Includes $433,801 worth of coal purchased for coking at mines.

[3] Expenses reported for bituminous mines are approximately net expenses. As to possible slight duplication in expenses for bituminous mines, see remarks preceding Table 51.

[4] $41,281,055 worth of bituminous coal was made into coke at mines.

The total production of coal in 1909, in round numbers, as shown in Table 2, was 460,049,000 tons. The total tonnage of bituminous coal was 378,975,000 and the total tonnage of anthracite 81,074,000. The mines covered by Table 1 produced 457,834,000 tons, of which 407,761,000 tons were produced for sale or for use as fuel, and 50,073,000 tons (of bituminous coal) were converted into coke at the mines, producing 32,450,000 tons of coke. The total value of all products of the industry (including only the mines covered by Table 1) was $577,143,000; and the total net expenses of coal mining and coke manufacture at the mines were $530,359,000, of which about four-fifths was for wages and salaries. The number of wage earners employed at mines with complete reports was 743,293.

The relation between expenses and value of products is more fully discussed in connection with the separate analyses of the statistics for anthracite and bituminous coal, respectively.

---

[1] *Number of operators and of mines.*—The number of producing operators given in Table 1, namely, 3,695, is exclusive of 3 anthracite and 93 bituminous operators who furnished incomplete reports and of 2 state penal institutions. In addition to these there were 6 anthracite and 38 bituminous operators of nonproducing mines; that is, mines in course of development but which produced no coal during 1909. However, of these latter 44 operators, 3 anthracite and 8 bituminous operators also reported producing mines, and hence were included in the above total of 3,695, so that, excluding these 11 duplications and including the remaining 33 concerns reporting nonproducing mines, the 96 furnishing incomplete reports, and the 2 penal institutions, the total number of operators in 1909, both producing and nonproducing, covered by the census was 3,826, of which 198 were anthracite and 3,628 bituminous operators. In this grand total there is a slight duplication, due to the fact that a few companies having both anthracite and bituminous mines have been counted in the total of each of these classes and hence have been duplicated in the above grand total of all classes, but the duplication is too slight to be of any material significance.

In Table 1 the number of producing mines given, 6,436, is exclusive of 7 anthracite and 113 bituminous enterprises for which incomplete reports were received, and of 2 bituminous mines operated by state penal institutions. However, in Tables 2, 4, 5, and 7, covering the entire coal production reported in 1909, as pointed out by accompanying footnotes and explanations, the output and value of coal from these 122 enterprises have been included in the totals given for the various states and for the United States. The number of anthracite mines given, 423, is made up of 308 mines proper, 52 washeries, and 63 river dredges.

GEOGRAPHICAL DISTRIBUTION OF COAL MINING: 1909.

Producing fields of the United States.—The map on the opposite page shows the general localities from which anthracite, bituminous, and subbituminous and lignite coals were mined in 1909. Various coal bearing areas with no output in that year are not shown on this map.

Anthracite is produced almost exclusively in a comparatively small area in eastern Pennsylvania. The most important bituminous field is the Appalachian, extending from western Pennsylvania and eastern Ohio southwestward as far as Alabama; the next most important is that embracing a large part of Illinois, southwestern Indiana, and part of western Kentucky. The large areas shown in North Dakota and the Rocky Mountain states are mainly of lignite and subbituminous coal. Although the map indicates a productive area in South Dakota, coal mining there in 1909 was confined to a few small local "banks" not covered by the census.

Production, by geographic divisions and leading states.[1]—The following table gives the total reported production and value of coal in the different geographic divisions and in the leading coal producing states. It includes coal made into coke at the mines, with a value assigned to it either by the operators or by the Census Bureau. The table also includes coal produced by mines operated by penal institutions, and by mines furnishing incomplete reports as to expenses, etc., which were not covered by Table 1. The statistics for the South Atlantic, East South Central, and West South Central divisions are combined, and also those for the two western divisions, in order to avoid disclosing the operations of individual concerns in certain states.

Statistics for the geographic divisions of the country have less significance in the case of mining than in the case of agriculture or manufactures. The divisions named include, respectively, the following coal producing states: The Middle Atlantic—Pennsylvania; the East North Central—Ohio, Indiana, Illinois, and Michigan; the West North Central—Iowa, Missouri, North Dakota, and Kansas; the Southern divisions—Maryland, Virginia, West Virginia, Georgia, Kentucky, Tennessee, Alabama, Arkansas, Oklahoma, and Texas; the Western divisions—Montana, Idaho, Wyoming, Colorado, New Mexico, Utah, Washington, Oregon, and California.

The table shows the marked preeminence of Pennsylvania among the coal mining states. In 1909 Pennsylvania produced nearly half the total coal output of the United States. The anthracite industry was practically confined to this state, and its bituminous tonnage was greater than that of any other three states combined. Next in order were West Virginia, Illinois, and Ohio. Together these four states mined 75.9 per cent of the total coal production of the United States.

[Includes coal made into coke at the mines.]

Table 2	COAL PRODUCED.[1]		VALUE OF COAL AT MINES.[1]	
	Tons (in thousands).	Per cent of total.	Total (in thousands).	Per cent of total.
United States	460,049	100.0	$552,895	100.0
Anthracite	81,074	17.6	149,251	27.0
Bituminous	378,975	82.4	403,644	73.0
GEOGRAPHIC DIVISIONS:				
Middle Atlantic	218,622	47.5	278,826	50.4
Anthracite	80,987	17.6	149,028	27.0
Bituminous	137,635	29.9	129,798	23.5
East North Central	95,278	20.7	99,249	18.0
West North Central	18,692	4.1	29,187	5.3
Southern divisions [2]	98,972	21.5	99,641	18.0
Western divisions [3]	28,485	6.2	45,992	8.3
Anthracite	87	(4)	223	(4)
Bituminous	28,398	6.2	45,769	8.3
LEADING STATES:				
Pennsylvania	218,622	47.5	278,826	50.4
Anthracite	80,987	17.6	149,028	27.0
Bituminous	137,635	29.9	129,798	23.5
West Virginia	61,823	11.3	44,668	8.1
Illinois	50,896	11.1	53,429	9.7
Ohio	27,863	6.1	27,628	5.0
Indiana	14,735	3.2	14,996	2.7
Alabama	13,692	3.0	16,197	2.9
Colorado (bituminous)	10,643	2.3	14,104	2.6
Kentucky	10,583	2.3	9,960	1.8
Iowa	7,732	1.7	12,693	2.3
Kansas	6,970	1.5	10,008	1.8
Wyoming	6,427	1.4	9,874	1.8
Tennessee	6,350	1.4	6,869	1.2

[1] Includes the production of mines for which incomplete reports were received, and of mines operated by penal institutions.

[2] Includes the South Atlantic, East South Central, and West South Central divisions.

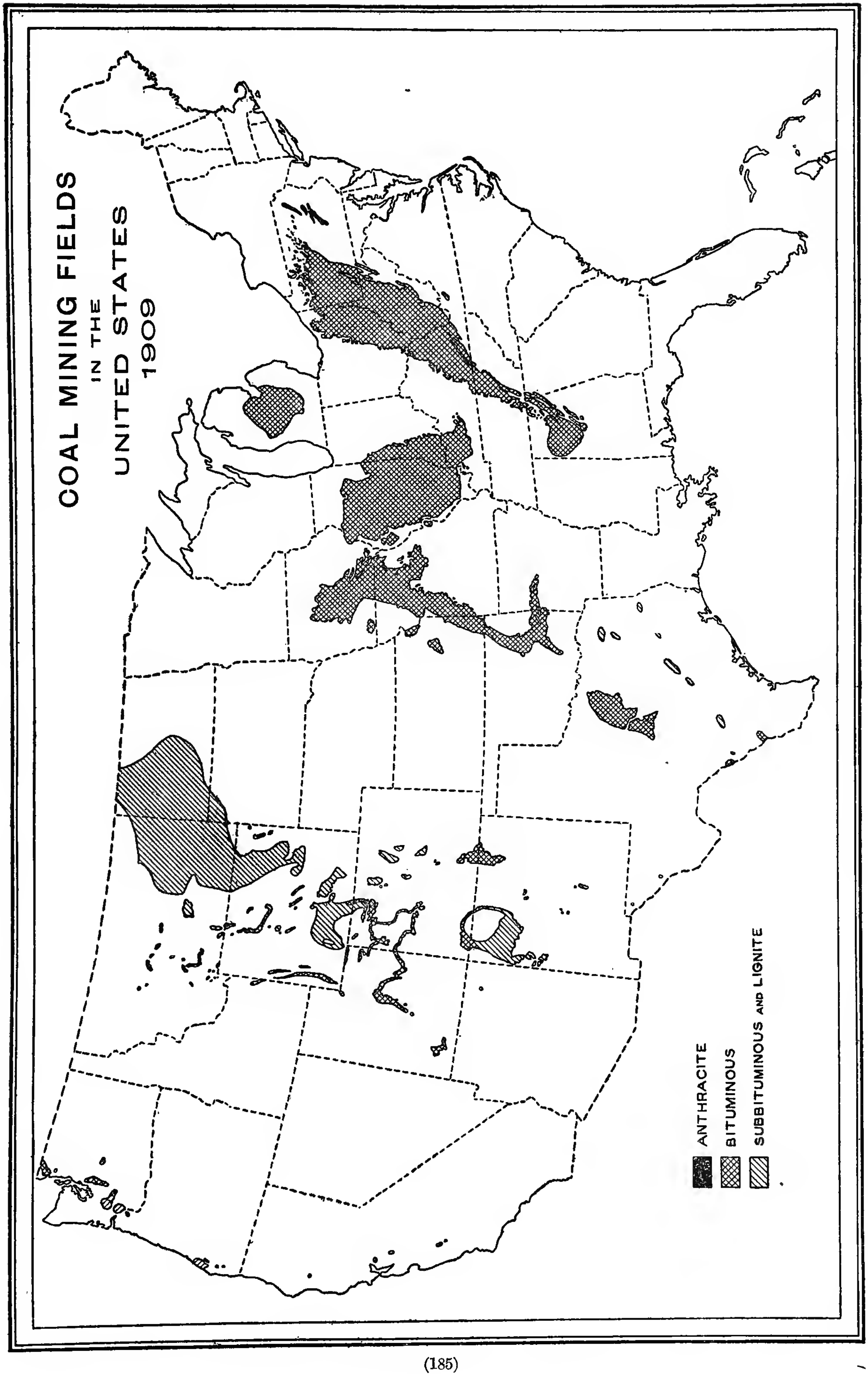
[3] Includes the Mountain and Pacific divisions.

[4] Less than one-tenth of 1 per cent.

Statistics of coal mining by geologic regions.—Table 3 (p. 186) summarizes the principal statistics of coal mining in the different geologic regions as designated by the United States Geological Survey. In this table the figures have been adjusted to give statistics of coal mining only, by deducting the capital, expenses, wage earners, and value of products attributable to the manufacture of coke at the mines. In large part the estimates of the numbers and amounts to be deducted on this account were made by the operators themselves; the few remaining estimates were made by the Bureau of the Census. The statistics relate to the same mines covered by Table 1, namely, those furnishing complete reports.

---

[1] Although the returns of production and value of coal in 1909 were secured by the Bureau of the Census for the United States Geological Survey, it will be observed that the figures in the table vary slightly from similar statistics of coal mining published by the Geological Survey. This is due, first, to the fact that the returns tabulated by the Geological Survey include those of numerous bituminous mines with an output of less than 1,000 tons for the year, while such mines were excluded from the statistics of the Bureau of the Census; second, to the fact that in the statistics of the Geological Survey the data for output and value of anthracite coal in Colorado and New Mexico are included with those for bituminous coal, while the census figures include this coal with anthracite; and, third, to the fact that errors in the reports of a few operators were discovered and corrected by the Bureau of the Census after the publication of the report of the Geological Survey for 1909.


COAL MINING FIELDS
IN THE
UNITED STATES
1909
ANTHRACITE
BITUMINOUS
SUBBITUMINOUS AND LIGNITE

STATISTICS OF COAL MINES, BY GEOLOGIC REGIONS: 1909.

[Data relating to coke manufacture at the mines are excluded, partly by estimate.]

Table 3

REGION.	Number of mines.	Acres of coal land controlled.	Capital.	Total expenses (net).	PRODUCTS.			Number of wage earners.	Total primary horsepower.
					Total value.[1]	Tons of coal (2,000 lbs.).	Value of coal at mines.		
United States	**6,436**	**6,847,545**	[2] **$1,207,217,543**	**$512,610,836**	**$550,757,948**	**457,833,640**	**$550,513,866**	**716,415**	**1,904,154**
Appalachian	3,902	4,979,766	938,481,026	357,466,476	387,269,562	330,906,966	387,106,056	507,418	1,447,300
Anthracite	[3] 420	273,499	246,713,318	134,245,600	148,957,894	80,881,106	148,957,894	173,263	676,128
Bituminous	3,482	4,706,267	691,767,708	223,220,876	238,311,668	250,025,860	238,148,162	334,155	771,172
Northern Interior	28	23,135	6,865,156	2,985,802	3,175,102	1,772,315	3,175,102	3,572	7,912
Eastern Interior	1,094	873,539	126,309,799	71,687,451	72,773,372	70,959,640	72,709,238	106,412	239,922
Western and Southwestern Interior	953	522,636	33,631,095	41,288,146	41,228,426	25,529,540	41,222,394	58,450	93,764
Rocky Mountain, Northern Great Plains, and Pacific Coast	459	448,469	90,204,647	39,182,961	46,311,486	28,665,179	46,301,076	40,563	115,256
Anthracite	3	860	214,760	205,954	222,577	87,024	222,577	241	625
Bituminous	456	447,609	89,989,887	38,977,007	46,088,909	28,578,155	46,078,499	40,322	114,631

---

[1] Includes value of minor products.

[2] Includes $11,725,820 which can not be distributed among the Eastern Interior, Western and Southwestern Interior, and Rocky Mountain, Northern Great Plains, and Pacific Coast regions.

[3] Includes 52 washeries and 63 river dredges.

The Appalachian region includes Alabama, Georgia, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and eastern Kentucky; the Northern Interior region, Michigan; the Eastern Interior region, Illinois, Indiana, and western Kentucky; the Western and Southwestern Interior regions, which here also include a relatively small output of lignite from the Gulf fields of Texas, embrace Arkansas, Iowa, Kansas, Missouri, Oklahoma, and Texas; and the Rocky Mountain, Northern Great Plains, and Pacific Coast regions include California, Colorado, Idaho, Montana, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming.

The Appalachian region reported 72.7 per cent of the total coal land held by mine operators, 70.8 per cent of the total number of wage earners employed, and 72.3 per cent of the total output of coal. Two-thirds of the output of bituminous coal and practically the entire production of anthracite came from this field. Although not shown by this table, the manufacture of coke at the mines was also far more important here than in any other region. Of the total output of coke made at the mines, namely, 32,450,482 tons, valued at $67,483,162, 30,717,145 tons, valued at $61,697,177, were produced in the Appalachian field. Practically all the remainder of the coke made at the mines was manufactured in the Rocky Mountain and Pacific Coast fields.

While the figures given for total expenses and for average expenses per ton require some qualification (see remarks preceding Table 51), they clearly indicate higher average expenses per ton in the northern and western producing regions than in the eastern. This is due, not to greater difficulties of mining, but to the differences in wages and in the cost of mine supplies.

The acreage of coal land given in Table 3 is only the acreage held by active mine operators and by no means approaches the total area underlaid by workable coal deposits in these various regions.

PROGRESS OF THE COAL MINING INDUSTRY.

Comparative production by geographic divisions and leading states: 1909, 1902, and 1889.—The next table gives the total quantity and value of the coal produced in the different geographic divisions and the leading states for the years 1909, 1902, and 1889. For 1909 it includes mines operated by penal institutions and mines furnishing incomplete reports; it covers coal made into coke at the mines, as well as that produced for sale or for use as fuel. In 1889 small local mines, such as were omitted from the census of 1909, were canvassed and data with reference to the quantity and value of coal produced were secured, and are here included, although other statistical data were not secured regarding such mines. However, their total production was not great enough to affect the comparability of the statistics appreciably.

The table shows the great development of the coal mining industry from 1889 to 1909. The total output was 141,230,000 tons in 1889 and 460,049,000 tons in 1909, an increase of 318,819,000 tons, or 225.7 per cent. By far the greater part of this increase was in the bituminous production, which rose from 95,629,000 tons to 378,975,000 tons, an increase of 296.3 per cent. In Pennsylvania the increase in the bituminous output was 101,461,000 tons, in West Virginia 45,591,000 tons, in Illinois 38,792,000 tons, and in Ohio 17,886,000 tons, or 280 per cent, 732 per cent, 320 per cent, and 179 per cent, respectively.

The decrease of 9.2 per cent in Pennsylvania anthracite production from 1889 to 1902, as well as a part of the increase of 95.7 per cent from 1902 to 1909, is accounted for by the prolonged strike in 1902, which greatly curtailed the output of the collieries for that year. The progress of this industry is much better indicated by a comparison of the figures of 1889 and 1909; between these years the increase in production was 35,442,000 tons, or 77.8 per cent, and in value, $83,306,000, or 126.8 per cent.

PRODUCTION AND VALUE OF COAL FOR GEOGRAPHIC DIVISIONS AND FOR THE LEADING STATES: 1909, 1902, AND 1889.

[Includes coal made into coke at the mines.]

Table 4	TONS OF COAL (IN THOUSANDS).			VALUE OF COAL AT MINES (IN THOUSANDS).			INCREASE,[2] TONS.				INCREASE, VALUE.			
							1902-1909		1889-1902		1902-1909		1889-1902	
	1909[1]	1902	1889	1909[1]	1902	1889	Amount (in thousands).	Per cent.	Amount (in thousands).	Per cent.	Amount (in thousands).	Per cent.	Amount (in thousands).	Per cent.
United States	460,049	301,688	141,230	$552,895	$367,013	$160,226	158,461	52.5	160,358	113.5	$185,882	50.6	$206,787	129.1
Anthracite	81,074	41,468	46,601	149,251	76,174	65,880	39,606	95.6	−4,133	−8.1	73,077	95.9	10,294	15.6
Bituminous	378,975	260,120	95,629	403,644	290,839	94,346	118,855	45.7	164,491	172.0	112,805	38.8	196,493	208.3
GEOGRAPHIC DIVISIONS:														
New England			2			6			(3)	(3)			(3)	(3)
Anthracite			2			6			(3)	(3)			(3)	(3)
Middle Atlantic	218,622	139,948	81,719	278,826	182,206	93,675	78,674	56.2	58,229	71.3	96,620	53.0	88,531	94.5
Anthracite	80,987	41,374	45,545	149,028	76,174	65,722	39,613	95.7	−4,171	−9.2	72,854	95.6	10,452	15.9
Bituminous	137,635	98,574	36,174	129,798	106,032	27,953	39,061	39.6	62,400	172.5	23,766	22.4	78,079	279.3
East North Central	95,278	66,870	24,994	99,249	72,952	24,113	28,408	42.5	41,876	167.5	26,297	36.0	48,839	202.5
West North Central	18,692	15,287	8,904	29,187	21,224	12,249	3,405	22.3	6,383	71.7	7,963	37.5	8,975	73.3
Southern divisions[4]	98,972	60,634	19,323	99,641	66,264	19,482	38,338	63.2	41,311	213.8	33,377	50.4	46,782	240.1
Western divisions[5]	28,485	18,849	6,288	45,992	24,367	10,701	9,636	51.1	12,561	199.8	21,625	88.7	13,666	127.7
Anthracite	87	94	54	223	(6)	152	−7	−7.4	40	74.1	(7)	(7)	(7)	(7)
Bituminous	28,398	18,755	6,234	45,769	[6] 24,367	10,549	9,643	51.4	12,521	200.9	(7)	(7)	(7)	(7)
LEADING STATES:														
Pennsylvania	218,622	139,948	81,719	278,826	182,206	93,675	78,674	56.2	58,229	71.3	96,620	53.0	88,531	94.5
Anthracite	80,987	41,374	45,545	149,028	76,174	65,722	39,613	95.7	−4,171	−9.2	72,854	95.6	10,452	15.9
Bituminous	137,635	98,574	36,174	129,798	106,032	27,953	39,061	39.6	62,400	172.5	23,766	22.4	78,079	279.3
West Virginia	51,823	24,571	6,232	44,668	24,749	5,087	27,252	110.9	18,339	294.3	19,919	80.5	19,662	386.5
Illinois	50,896	32,939	12,104	53,429	33,946	11,755	17,957	54.5	20,835	172.1	19,483	57.4	22,191	188.8
Ohio	27,863	23,520	9,977	27,628	26,954	9,355	4,343	18.5	13,543	135.7	674	2.5	17,599	188.1
Indiana	14,735	9,446	2,845	14,996	10,400	2,888	5,289	56.0	6,601	232.0	4,596	44.2	7,512	260.1
Alabama	13,692	10,355	3,573	16,197	12,420	3,961	3,337	32.2	6,782	189.8	3,777	30.4	8,459	213.6
Colorado (bituminous)	10,643	7,349	2,544	14,104	[8] 8,338	3,844	3,294	44.8	4,805	188.9	5,766	69.2	4,494	116.9
Kentucky	10,583	6,767	2,400	9,960	6,667	2,374	3,816	56.4	4,367	182.0	3,293	49.4	4,293	180.8
Iowa	7,732	5,905	4,095	12,693	8,660	5,427	1,827	30.9	1,810	44.2	4,033	46.6	3,233	59.6
Kansas	6,970	5,266	2,221	10,008	6,863	3,297	1,704	32.4	3,045	137.1	3,145	45.8	3,566	108.2
Wyoming	6,427	4,429	1,389	9,874	5,236	1,749	1,998	45.1	3,040	218.9	4,638	88.6	3,487	199.4
Tennessee	6,350	4,383	1,926	6,869	5,400	2,338	1,967	44.9	2,457	127.6	1,469	27.2	3,062	131.0

[1] Includes production of mines for which incomplete reports were received and of mines operated by penal institutions.
[2] A minus sign (—) denotes decrease.
[3] None produced in 1902.
[4] Includes the South Atlantic, East South Central, and West South Central divisions.
[5] Includes the Mountain and Pacific divisions.
[6] Value given for bituminous includes value of anthracite.
[7] Not computed. See Note 6.
[8] Estimated value of anthracite has been deducted from figures published in 1902.

Comparative production by geologic regions: 1909 and 1889.[1]—The following table gives the quantity and value of the coal produced in the different geologic regions for 1909 and 1889. The table includes the coal reported by penal institutions and by mines for which incomplete reports were received.

[Includes coal made into coke at the mines.]

Table 5 REGION.	TONS OF COAL (IN THOUSANDS).			VALUE AT MINES (IN THOUSANDS).			AVERAGE VALUE PER TON.	
	1909[1]	1889	Per cent of increase.	1909[1]	1889	Per cent of increase.	1909	1889
United States	460,049	141,230	225.7	$552,895	$160,226	245.1	$1.20	$1.13
Anthracite	81,074	45,601	77.8	149,251	65,880	126.5	1.84	1.44
Bituminous	378,975	95,629	296.3	403,644	94,346	327.8	1.07	0.99
Appalachian	332,479	108,569	206.2	388,541	119,305	225.7	1.17	1.10
Anthracite	80,987	45,547	77.8	149,028	65,728	126.7	1.84	1.44
Bituminous	251,492	63,022	299.1	239,513	53,577	347.0	0.95	0.85
Northern Interior	1,783	68	2,522.1	3,195	115	2,678.3	1.79	1.69
Eastern Interior	71,297	16,240	339.0	73,150	15,796	363.1	1.03	0.97
Western and Southwestern Interior	25,623	10,036	155.3	41,433	14,268	190.4	1.62	1.42
Rocky Mountain, Northern Great Plains, and Pacific Coast	28,867	6,317	357.0	46,576	10,742	333.6	1.61	1.70
Anthracite	87	54	61.1	223	152	46.7	2.56	2.81
Bituminous	28,780	6,263	359.5	46,353	10,590	337.7	1.61	1.69

[1] Includes production of mines operated by penal institutions and of mines for which incomplete reports were received.

Of the total increase of 318,819,000 tons in output between 1889 and 1909, 223,910,000 tons, or seven-tenths, represents the increase in the Appalachian region. In bituminous coal the increase in this region was 188,470,000 tons, out of a total increase for the United States of 283,346,000 tons. While the greatest absolute increase took place in the Appalachian region, greater percentages of increase are shown for every other field except the Western and Southwestern Interior regions. In the Northern Interior region almost the entire development of the industry has been accomplished in the 20 years covered by the table. The somewhat slower growth of the industry in the Western and Southwestern Interior fields is accounted for by the fact that these fields serve markets, largely rural, in which coal consumption has not increased so rapidly as in the markets supplied by the other regions.

It will be noted that the average value per ton has increased in every region except the Rocky Mountain, Northern Great Plains, and Pacific Coast. For the entire country the increase for bituminous coal was from $0.99 in 1889 to $1.07 in 1909; in the Appalachian field, the most important, the average value of bituminous coal was $0.85 per ton in 1889 and $0.95 in 1909, and that of anthracite, $1.44 and $1.84, respectively. In general, the increases in average values may be ascribed to higher wages and greater cost of mine supplies. The decrease in average values in the far western fields is discussed in connection with Table 36.

---

[1] For statement of area included in each region, see discussion following Table 3.

Comparative statistics for the United States: 1909 and 1889.—Table 6 gives the chief items from the census returns for 1909 and 1889 which are comparable or which can be so adjusted as to be comparable. The statistics for 1909 have been made to relate solely to coal mining by deducting (see explanation accompanying Table 3) the capital, total expenses, wages, cost of supplies, and value of products attributable to coke manufacture, and by adding the tonnage and value of coal made into coke at the mines. All the data for 1909 are exclusive of those for mines with incomplete reports and for penal institutions.

The tonnage and value of coal shown for 1889 include the quantity and value of the output of many small "banks" or local mines, which are not included in the number of mines given or in the statistics of acreage, capital, or expenses. However, the total output of these mines was very small, so that the average expense per ton, although based on the output of all mines and the expenses of only part of them, is substantially comparable with that for 1909.

Salaries of foremen, totaling $3,510,543, have been deducted from the wages published in the 1889 statistics, since in 1909 the payments to inside and outside foremen were included in salaries.

It is also to be observed that the acreage given in the table covers all lands controlled by operators, both coal bearing and noncoal bearing. In 1889 the holdings of coal land were not reported separately from those of other land, and hence to obtain comparable data it is necessary to include the holdings of noncoal bearing lands in the figures for 1909. However, this does not materially affect the value of the figures for comparative purposes, since the control of barren land is often necessary for the development of coal deposits, and since nearly 85 per cent of the total land shown for 1909 was reported as coal bearing and much of the remainder, although not fully prospected, is known to be underlaid with coal measures, which may eventually prove workable.

The figures for total expenses for the two census years are not strictly comparable, because the 1889 schedule called for the inclusion in miscellaneous expenses of interest on borrowed money, while the schedule for 1909 excluded interest payments. However, the amount of interest included in the returns for 1889 was doubtless so small as not to affect the total expenses appreciably. For all coal mines, both anthracite and bituminous, the amount expended for miscellaneous expenses in 1909—not shown separately in the table—was $45,742, 610, of which $20,016,639 was for royalties and $3,893,257 for contract work. The balance ($21,832,714) covered taxes, rent of offices, use of patents, insurance, ordinary repairs of buildings and machinery, and all other sundry expenses. In 1889 the miscellaneous expenses amounted to $18,576,762, of which $3,155,171 was for contract work. The remaining $15,421,591 included not only interest and sundry expenses similar to those covered in 1909, but royalties as well. The item of interest in 1889 must therefore have been small as compared with total expenses.

In considering the total expenses and the average expenses per ton, the remarks on page 181 under "Expenses" as to the significance of the data should be borne in mind.

COMPARATIVE SUMMARY FOR COAL MINES: 1909 AND 1889.

[Statistics relating to coke manufacture at mines excluded, partly by estimate.]

Table 6	1909	1889	INCREASE.	
			Amount.	Per cent.
All mines				
Number of mines	[1] 6,436	[2] 2,564	3,872	151.0
Acres of coal and other land controlled	[3] 8,182,749	1,741,491	6,452,947	370.5
Owned	5,952,110	1,248,373	4,703,737	376.8
Held under lease	2,242,328	493,118	1,749,210	354.7
Capital	$1,207,217,543	$342,757,929	$864,459,614	252.2
Expenses (gross), total	$517,483,749	$146,536,280	$370,947,469	253.1
Wages	$374,696,545	$103,426,515	$271,270,030	262.3
Supplies	$72,043,898	$18,828,590	$53,215,308	282.6
Coal produced, including coal coked at mines:				
Tons (2,000 pounds)	457,833,640	141,229,513	316,604,127	224.2
Value at mines [4]	$550,513,866	$160,226,323	$390,287,543	243.6
Anthracite				
Number of mines	[1] 423	[2] 346	77	22.3
Acres of coal and other land controlled	[3] 465,134	214,558	262,265	122.2
Owned	316,867	107,362	209,505	195.1
Held under lease	159,956	107,196	52,760	49.2
Capital	$246,928,078	$162,035,610	$84,892,468	52.4
Expenses (gross), total	$139,324,467	$61,212,087	$78,112,380	127.6
Wages	$92,317,659	$37,854,273	$54,463,386	143.9
Supplies	$26,697,966	$10,834,380	$15,863,586	146.4
Average expenses per ton, total	$1.72	$1.34	$0.38	28.4
Wages	$1.14	$0.83	$0.31	37.3
Supplies	$0.33	$0.24	$0.09	37.5
Coal produced:				
Tons (2,000 pounds)	80,968,130	45,600,487	35,367,643	77.6
Value at mines [4]	$149,180,471	$65,879,514	$83,300,957	126.4
Average value per ton	$1.84	$1.44	$0.40	27.8
Bituminous				
Number of mines	6,013	[2] 2,218	3,795	171.1
Acres of coal and other land controlled	7,717,615	1,526,933	6,190,682	405.4
Owned	5,635,243	1,141,011	4,494,232	393.9
Held under lease	2,082,372	385,922	1,696,450	439.6
Capital	$960,289,465	$180,722,319	$779,567,146	431.4
Expenses (gross), total	$378,159,282	$85,324,193	$292,835,089	343.2
Wages	$282,378,886	$65,572,242	$216,806,644	330.6
Supplies	$45,345,932	$7,994,210	$37,351,722	467.2
Average expenses per ton, total	$1.00	$0.89	$0.11	12.4
Wages	$0.75	$0.69	$0.06	8.7
Supplies	$0.12	$0.08	$0.04	50.0
Coal produced, including coal coked at mines:				
Tons (2,000 pounds)	376,865,510	95,629,026	281,236,484	294.1
Value at mines	$401,333,395	$94,346,809	$306,986,586	325.4
Average value per ton	$1.06	$0.99	$0.07	7.1

[1] Includes 52 washeries and 63 river dredges.

[2] The figures representing the number of mines in 1889 are exclusive of 9,969 small mines—49 anthracite and 9,920 bituminous—the quantity and value of whose products are included in the tonnage and value of coal produced (forming about 2 per cent of the total), but for which no other statistics are available.

[3] The total acreage of anthracite land (coal and other land combined) is exclusive of a duplication of 11,689 acres in figures for owned and leased acreage. See page 181.

[4] No value was assigned to anthracite coal used for fuel at the mines in 1889.

The capital invested in coal mines and the output and value of coal produced were more than three times as great in 1909 as in 1889, and the acreage of land controlled was more than four times as great. By far the greater part of this development took place in bituminous mining, which is explained by the fact that the anthracite deposits are narrowly limited in extent, while the great area covered by the bituminous fields has permitted wide extension of the industry.

The growth of bituminous mining has involved—first, an increase in the number of mines operated and in the acreage of land brought under development, and second, an increase in the output of the individual mine, while that of anthracite mining has involved chiefly an increase in the output of the individual colliery. For bituminous coal in 1889 the average output per mine, exclusive of small local "banks," was, in round numbers, 42,000 short tons, as compared with 63,000 in 1909, an increase of about 50 per cent. In the anthracite industry this increase was much greater. In 1889 the average output for each anthracite mine was about 132,000 short tons, as compared with about 191,000 tons in 1909, if the entire number of enterprises (423) given in the above table be taken as a basis. However, if the comparison be restricted to mines proper, by eliminating the production of the 115 washeries and river dredges included in the data for 1909, the number of anthracite mines shows a decline from 346 in 1889 to 308 in 1909, while the average output per mine shows an increase from 132,000 tons to nearly 250,000 tons, or approximately 90 per cent.

In 1889 lands owned comprised 74.7 per cent of the total acreage controlled by the operators of bituminous mines, while the corresponding proportion in 1909 was 73 per cent. On the other hand, in the case of anthracite mining the proportion of the land owned by operators was decidedly higher in 1909 than in 1889. In 1889 about half the holdings of anthracite land reported were owned by the operators, while in 1909 about two-thirds were owned. This change may be explained in part by the fact that leased tracts have usually been worked out more rapidly than owned lands, since on leased holdings royalties must be paid whether coal is mined or not.

In general, from 1889 to 1909 both the average expense of production and the average value of coal increased. This is especially true of anthracite. In 1889 the average expense reported per short ton of anthracite was $1.34, as compared with $1.72 in 1909, while the average value per short ton was $1.44, as compared with $1.84 in 1909 (see remarks under Table 22). The increase in expense thus amounted to $0.38 per ton and the difference in value to $0.40 per ton. The average amount paid out in wages increased $0.31 per ton. The increase in average expense may have been due in part to higher rates of wages, but was doubtless also due in part to the greater difficulty of mining measures deeper and thinner than were generally worked in 1889. For bituminous coal the average expense per short ton reported in 1889 was $0.89, as compared with $1 in 1909. This increased expense is attributable mainly to increased rates of wages and the higher cost of mine supplies.

Population and coal production: 1849-1909.—The following table compares the growth of population with the increase in the output of coal during each decade from 1849 to 1909.

Table 7

YEAR.	POPULATION.[1]		COAL PRODUCTION.		
	Number.	Per cent of increase over preceding census.	Quantity (ton of 2,000 pounds).	Per cent of increase over preceding census.	Tons per capita.
1849	23,191,876	....	6,445,681	....	0.28
1859	31,443,321	35.6	14,333,922	122.4	0.46
1869	38,558,371	22.6	36,807,333	156.8	0.95
1879	50,155,783	30.1	71,481,570	94.2	1.43
1889	62,947,714	25.5	141,229,513	97.6	2.24
1899	75,994,575	20.7	[2] 253,741,192	79.7	3.34
1909	91,972,266	21.0	[3] 460,048,585	81.3	5.00

[1] Population is for the year following that covered by the statistics for coal.

[2] From the report of the Geological Survey.

[3] Includes the production of mines operated by penal institutions, of mines for which incomplete reports were received, and of coal coked at the mines.

This table shows an enormous increase in the production of coal, as compared with the increase in population. In 1849 only about one-fourth of a ton was produced per capita, as compared with 5 tons per capita 60 years later. While the population of the country in 1909 was less than four times that in 1849, the production of coal was more than seventy times that in the earlier year. Even in the later periods, when the quantity of coal mined had reached large proportions, the increase in coal production was very rapid. From 1889 to 1899, and again from 1899 to 1909, coal output increased nearly four times as rapidly as population. These comparative figures reflect the industrial expansion of the nation.

Comparative statistics of engines and power: 1909 and 1902.—The next table shows the total primary horsepower, the number and horsepower of steam engines, and the number and horsepower of electric motors used in anthracite and bituminous producing coal mines in 1909 and 1902. The total primary horsepower given represents that of steam engines owned by the operators, plus that of motors operated by purchased electric current, plus an insignificant amount of power of other kinds, not shown separately. The statistics include the power used in coke manufacture at the bituminous mines, which, however, was comparatively unimportant in amount.

The total primary horsepower used in the anthracite mines increased 62.5 per cent between 1902 and 1909, while that used in the bituminous mines increased 149 per cent in the same period. Most of the primary power used in the coal mines is that of steam engines. The bituminous mines reported 25,294 horsepower of primary electric power (motors operated by purchased current) in 1909, however, or more than 11 times as much as in 1902. The anthracite mines reported no power of this kind in 1902 and only 1,410 horsepower in 1909. Of the miscellaneous primary power included in the totals for 1909, but not shown separately in the table, gas engines furnished 3,101 horsepower—2,329 for the bituminous mines and 772 for the anthracite—and water wheels furnished 348 horsepower, all of which was used in the bituminous mines.

COMPARATIVE STATISTICS OF ENGINES AND POWER: 1909 AND 1902.

Table 8 CLASS OF MINES.	Census.	Primary horsepower, total.	STEAM ENGINES.		ELECTRIC MOTORS.				
			Number.	Horsepower.	Total horsepower.	Run by current generated by operator.		Run by purchased current.	
						Number.	Horsepower.	Horsepower.	Per cent of total primary power.
Total	1909	1,904,154	19,318	1,874,001	402,090	10,869	375,386	26,704	1.4
	1902	909,160	11,142	904,305	73,849	1,400	71,682	2,167	0.2
Per cent of increase		109.4	73.4	107.2	444.5	676.4	423.7	1,132.3	
Anthracite (Pennsylvania)	1909	676,128	7,567	673,946	47,498	1,152	46,088	1,410	0.2
	1902	416,012	4,629	415,827	5,755	78	5,755		
Per cent of increase		62.5	63.5	62.1	725.3	1,376.9	700.8		
Bituminous	1909	[1] 1,228,026	[1] 11,761	[1] 1,200,055	354,592	9,717	329,298	25,294	2.1
	1902	493,148	6,513	488,478	68,094	1,322	65,927	2,167	0.4
Per cent of increase		149.0	80.4	145.7	420.7	635.0	399.5	1,067.2	

[1] Thirteen steam engines of 625 horsepower, reported by anthracite mines outside of Pennsylvania, are included in the figures for bituminous mines.

Nearly all electric motors used at the mines were run by current generated by the mine operators themselves. The use of such motors shows a marked increase from 1902 to 1909, their total horsepower increasing in this period from 71,682 to 375,386. Much the greater number were reported by bituminous mines.

CHARACTER OF ORGANIZATION.

General summary.—The relative importance of the different forms of organization is shown in the following table, which gives for individuals, firms, corporations, and other organizations the number of operators, the number of mines, the number of wage earners employed, the tonnage of coal mined (including that for conversion into coke), and the total value of coal, coke, and other products reported. The statistics do not cover the few mines with incomplete reports or those operated by penal institutions.

PRINCIPAL STATISTICS FOR OPERATORS OF COAL MINES CLASSIFIED ACCORDING TO CHARACTER OF ORGANIZATION: 1909.

Table 9 CHARACTER OF ORGANIZATION.	TOTAL.					ANTHRACITE.					BITUMINOUS.				
	Number of operators.	Number of mines.	Number of wage earners.	Tons of coal, including coal coked at mines (in thousands).	Value of products (in thousands).	Number of operators.	Number of mines.	Number of wage earners.	Tons of coal (in thousands).	Value of products (in thousands).	Number of operators.	Number of mines.	Number of wage earners.	Tons of coal, including coal coked at mines (in thousands).	Value of products (in thousands).
All classes	3,695	6,436	743,293	457,834	$577,143	192	423	173,504	80,968	$149,180	3,503	6,013	569,789	376,966	$427,962
Individual	1,058	1,195	17,475	8,812	10,490	37	38	308	216	283	1,021	1,157	17,167	8,696	10,207
Firm	664	805	24,699	12,999	17,111	44	54	6,872	3,662	5,754	620	751	17,827	9,337	11,357
Corporation	1,942	4,393	695,985	432,940	544,886	105	325	164,499	76,327	141,554	1,837	4,068	531,486	356,613	403,331
Other	31	43	5,134	3,083	4,666	6	[1] 6	1,825	763	1,589	25	[2] 37	3,309	2,320	3,067
Per cent of total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Individual	28.6	18.6	2.4	1.9	1.8	19.3	9.0	0.2	0.3	0.2	29.1	19.2	3.0	2.3	2.4
Firm	18.0	12.5	3.3	2.8	3.0	22.9	12.8	4.0	4.5	3.9	17.7	12.5	3.1	2.6	2.7
Corporation	52.6	68.3	93.6	94.6	94.4	54.7	76.8	94.8	94.3	94.9	52.4	67.7	93.3	94.6	94.2
Other	0.8	0.7	0.7	0.7	0.8	3.1	1.4	1.1	0.9	1.1	0.7	0.6	0.6	0.6	0.7
Average per operator			201	124	156			904	422	777			163	108	122
Individual			17	8	10			8	6	8			17	8	10
Firm			37	20	26			156	83	131			29	15	18
Corporation			358	223	281			1,567	727	1,348			289	194	220
Other			166	99	150			304	127	265			132	93	123

[1] Comprises 2 mines operated by estates and 4 operated by limited partnerships, combined in order to avoid disclosing individual operations.
[2] Includes 21 mines operated by cooperative companies.

The table shows the predominance of the corporate form of organization among the producers of coal. The 1,942 corporations comprised 52.6 per cent of the total number of concerns reporting, operated 68.3 per cent of the total number of mines, employed 93.6 per cent of the wage earners in the industry, and produced 94.6 per cent of the entire quantity of coal mined. While there were also 1,058 individual operators, 664 firms, and 31 others reporting, nearly all of these were relatively small concerns. For corporations the average production per operator was about 223,000 tons, for firms 20,000 tons, and for individuals 8,000 tons.

Detailed statement for incorporated and unincorporated operators.—The following table gives somewhat more detailed statistics for incorporated and unincorporated operators in 1909.

STATISTICS FOR OPERATORS CLASSIFIED AS INCORPORATED OR UNINCORPORATED: 1909.

Table 10	BITUMINOUS.				ANTHRACITE.	
	Mines without coke manufacture.		Mines with coke manufacture.		Incorporated operators.	Unincorporated operators.
	Incorporated operators.	Unincorporated operators.	Incorporated operators.	Unincorporated operators.		
Number of mines	3,468	1,897	600	48	325	98
Number of operators	1,676	1,646	161	20	105	87
Capital	$681,353,862	$16,003,275	$345,621,191	$19,318,755	$241,638,086	$5,289,992
Net expenses	$284,333,946	$17,117,950	$90,837,416	$3,617,714	[1] $127,586,768	[1] $6,864,786
Salaries	$15,883,421	$617,643	$5,059,504	$240,327	$4,363,423	$219,881
Wages	$214,680,729	$13,414,162	$63,425,551	$2,676,046	$87,736,209	$4,581,450
Persons engaged in industry	416,061	37,412	133,618	5,586	168,609	9,395
Proprietors and firm members	......	3,648	......	91	......	188
Performing manual labor	......	1,709	......	4	......	72
Salaried officers of corporations	1,994	[2] 11	306	[2] 4	171	......
Superintendents and managers	3,760	428	1,293	85	887	69
Clerks and other salaried employees	7,895	323	2,945	105	3,052	133
Wage earners	402,412	33,002	129,074	5,301	164,499	9,005
Products:						
Quantities (tons of 2,000 pounds)—						
Coal, total production	264,121,957	16,530,083	92,490,571	3,722,899	76,326,564	4,641,566
Coal (exclusive of coal made into coke)	264,121,957	16,530,083	45,957,497	183,370	76,326,664	4,641,566
Coke made at mines	......	......	30,038,884	2,411,598	......	......
Value at mines	$296,081,343	$19,813,592	$107,249,662	$4,817,867	$141,554,636	$7,625,835
Coal (exclusive of coal made into coke)	$295,875,314	$19,784,032	$44,219,327	$173,667	$141,554,636	$7,625,835
Coke made at mines	......	......	$62,838,962	$4,644,200	......	......
Other products	$206,029	$29,560	$191,373	......	......	......
Average per ton:						
Net expenses	$1.08	$1.04	......	......	$1.67	$1.48
Salaries	0.06	0.04	......	......	0.06	0.05
Wages	0.81	0.81	......	......	1.15	0.99

[1] Gross expenses were reported as follows: Incorporated operators, $132,210,139; unincorporated operators, $7,114,328.

[2] Salaried officials of cooperative associations, limited partnerships, etc.

In considering the average expenses per ton shown in the table the remarks on page 181 as to the limitations of the data should be borne in mind. Moreover, the average expenses per ton for incorporated and unincorporated producers are not strictly comparable, owing to the fact that such supervisory services as are performed for corporations by salaried officers or managers are in part performed for unincorporated producers by proprietors and firm members, many of whom receive no salaries for these services, but look to the profits of the enterprise for their compensation. Indeed, a considerable number of such proprietors and firm members were returned as performing manual labor at their mines, although the expenses reported included no wage payments for this labor. While the salary payments averaged $0.06 per ton for anthracite produced by corporations and $0.05 per ton for the output of other concerns, the latter figure would be materially higher if an allowance were made for the supervisory services of proprietors and firm members of unincorporated enterprises, especially in view of the fact that the latter were, as a rule, conducted on a much smaller scale than those under corporate ownership, so that the services of the proprietors would have to be apportioned to a smaller output.

The average wage payment per ton for anthracite produced by corporations was $1.15, as compared with $0.99 for the output of other concerns, but the latter figure includes no valuation for the services of the 72 proprietors who performed manual labor; moreover, the production of the unincorporated concerns contained a higher proportion of output from culm banks, which was recovered at a comparatively low wage cost, and in turn was of lower value. (See Table 28.) A comparison between bituminous mines under corporate and other forms of ownership can properly be attempted only for those without coke manufacture. For such mines the wage payment averaged $0.81 per ton for each class of ownership, but the fact that the unincorporated concerns reported 1,709 proprietors performing manual labor, for which no wages were included in the expenses returned, must be considered in this connection.

INDUSTRIAL AFFILIATIONS OF OPERATORS.

Numerous manufacturing, transportation, and other industrial enterprises which consume large quantities of coal either operate their own mines or, through the ownership of securities, are affiliated with coal mining companies. The conditions of marketing, and hence of producing, coal may be affected by this relationship. In the first place, the values assigned to coal by producers thus affiliated may bear little relation to market prices. In the second place, the coal mining subsidiaries of industrial concerns are assured of a demand for a more or less definite tonnage, are free from the uncertainty of disposing profitably of their output in competitive markets, and accordingly may operate their mines on a larger scale and with greater regularity. On the other hand, coal producers not thus connected are assured of no market for their output beyond the terms of the contracts they may have, are often subjected to rigorous competition in the open market, and in consequence their mines must often be operated on a smaller scale and with less regularity. In order to obtain statistics bearing on this relationship, all operators have been classified according to their industrial affiliation—so far as definitely known—as connected with iron and steel concerns, with other industrial concerns, or with railroads, respectively, or as unaffiliated. No mining enterprise was assigned to any of the first three groups except on official information. Railroads interested in coal mining companies through the ownership of securities report such ownership to the Interstate Commerce Commission, and these reports were used to determine what operators were affiliated with railroads. Any coal mining companies controlled by railroads in ways not reported to the Interstate Commerce Commission have, therefore, been included with unaffiliated operators in this classification. The control of coal mines by iron and steel and other industrial concerns was determined from the census reports of such companies for their coal mining operations and by correspondence with them. It is probable that some mines classified as unaffiliated for lack of definite information were, as a matter of fact, controlled directly or indirectly by industrial concerns. The following table gives the production of coal in 1909 by operators classified as above outlined; it does not cover the few mines with incomplete reports, nor those operated by penal institutions.

Coal Production of Operators Classified According to their Industrial Affiliations: 1909.

Table 11 AFFILIATION OF OPERATORS.	TONS OF COAL PRODUCED (2,000 POUNDS).		
	Total.	Anthracite.	Bituminous.
Total	**457,633,640**	**80,968,130**	**376,665,510**
Affiliated with—			
Iron and steel companies	46,587,216		46,587,216
Other industrial companies	45,376,419		45,376,419
Railroad companies	121,985,188	61,170,097	60,815,091
Unaffiliated	243,884,817	19,798,033	224,086,784

The table shows that of the entire output of coal in 1909 nearly one-half was mined by operators known to be closely affiliated with railroads or industrial concerns. Producers connected with railroads mined more than one-fourth of the total coal production, and more than three-fourths of the total in the case of anthracite. The coal mining subsidiaries of iron and steel companies produced about one-tenth of the total tonnage, and those of other industrial concerns nearly as much. These figures show that the large consumers of coal have quite commonly taken measures to secure their own supplies of fuel. (See also Tables 23, 45, and 47.)

SCALE OF PRODUCTION.

The scale of production in coal mining may be considered in two aspects: First, that of the individual mine; and, second, that of the operator. The fact that many operators rendered combined reports for all their mines—though, of course, stating the number of mines covered—instead of a separate report for each, made impossible any complete classification of mines according to output, so that only general information is available as to average size of the individual mine, based on the entire number of mines reported and the entire output.

Size of mines.—While the size of both anthracite and bituminous mines varies widely, yet, broadly speaking, the scale of operations is much larger in the former than in the latter. While many bituminous mines in 1909 produced more than 250,000 tons each, and some exceeded 500,000 tons, the average for all bituminous mines covered by the census was only about 63,000 (short) tons, and for all "commercial" mines—that is, mines selling in general markets—only about 76,000 tons. If the very small local mines were included, which were not canvassed because their aggregate production is negligible, the average would be much lower. On the other hand, the average output of anthracite mines in 1909 (not counting washeries and river dredges) was nearly 250,000 (short) tons. By far the greater part of the anthracite mined is produced by comparatively large collieries. The limited area of the anthracite deposits and the depth of the measures encourage the concentration of production in large collieries, while the wide extent of the bituminous fields, the cheapness of great areas of coal land, and the general accessibility of the deposits favor the opening of many small mines. As shown by Table 6, the average size of mines, both bituminous and anthracite, has increased materially since 1889.

Classification of operators according to value of products.—Three classifications of operators have been made to show the size of the producing organizations in coal mining. The first classifies operators according to value of products, the second according to the number of wage earners employed, and the third according to the acreage of land controlled.

The next table gives for 1909 the number of operators classified according to the value of product per operator (based on all products, including coke made at the mines), together with the total value of products for each class. Penal institutions and mines with incomplete reports are excluded.

This classification shows a marked degree of control by large producing organizations. Of the total value of products for all operators, namely, $577,143,000, the 85 concerns each having products valued at $1,000,000 or over together reported $348,496,000, or about 60 per cent. At the other extreme, the 2,979 operators each having products valued at less than $100,000 together reported but $56,485,000, or less than 10 per cent of the total. In the anthracite industry 9 producing concerns, each having a value of product exceeding $5,000,000, together reported nearly three-fourths of the total value of anthracite. Among the bituminous mining organizations, the 10 each reporting products valued at $5,000,000 or over together reported one-fourth of the total value of products, while the 68 operators each having products valued at $1,000,000 or over together contributed more than half the total. In this industry production is relatively much less closely concentrated in the hands of great companies than in anthracite mining.

Table 12

VALUE OF ALL PRODUCTS (INCLUDING COKE) PER OPERATOR.	TOTAL.		ANTHRACITE.		BITUMINOUS.	
	Number of operators.	Value of all products.	Number of operators.	Value of products.	Number of operators.	Value of all products (including coke).
Total	3,695	$577,142,935	192	$149,180,471	3,503	$427,962,464
Less than $10,000[1]	1,666	6,407,712	69	172,699	1,597	6,235,013
$10,000 to $100,000[2]	1,313	50,077,098	52	2,364,432	1,261	47,712,666
$100,000 to $500,000	561	125,783,899	39	10,871,318	522	114,912,581
$500,000 to $1,000,000	70	46,377,776	15	10,149,104	55	36,228,672
$1,000,000 to $5,000,000	66	132,499,197	8	17,651,088	58	114,848,109
$5,000,000 and over	19	215,997,253	9	107,971,830	10	108,025,423
Per cent of total	100.0	100.0	100.0	100.0	100.0	100.0
Less than $10,000	45.1	1.1	35.9	0.1	45.6	1.5
$10,000 to $100,000	35.5	8.7	27.1	1.6	36.0	11.1
$100,000 to $500,000	15.2	21.8	20.3	7.3	14.9	26.9
$500,000 to $1,000,000	1.9	8.0	7.8	6.8	1.6	8.5
$1,000,000 to $5,000,000	1.8	23.0	4.2	11.8	1.6	26.8
$5,000,000 and over	0.5	37.4	4.7	72.4	0.3	25.2

[1] Includes 1 anthracite operator with a product valued at more than $10,000, in order to avoid disclosing individual operations.

[2] Includes 1 anthracite operator with a product valued at more than $100,000.

Classification of operators according to the number of wage earners employed.—The following table gives the number of operators in 1909, classified according to the number of wage earners employed per operator (including those employed in coke manufacture at the mines), together with the number of wage earners employed by each group. Penal institutions, operators failing to make complete reports, and operators employing no wage earners directly, are excluded.

The classification indicates the importance of the larger coal mining companies as employers of labor. The 22 concerns, each of which employed more than 5,000 wage earners, together reported over 269,000 employees, or an average of more than 12,000 each, and the employees of these 22 companies constituted more than one-third of all the wage earners reported. Of these 22 operators, 10 were anthracite producers, and their total of 134,000 wage earners constituted more than three-fourths of all the men employed in the anthracite industry. Among the bituminous operators, 77 with more than 1,000 wage earners each, together reported 274,596 wage earners, or nearly half the total for the industry.

Table 13

NUMBER OF WAGE EARNERS (ALL CLASSES) EMPLOYED PER OPERATOR.	NUMBER.		PER CENT OF TOTAL.	
	Operators.	Wage earners (including those making coke at mines).	Operators.	Wage earners (including those making coke at mines).
Total, all classes	[1] 3,638	743,293	100.0	100.0
20 or less	1,606	12,764	44.1	1.7
21 to 50	594	19,600	16.3	2.6
51 to 100	485	35,279	13.3	4.7
101 to 500	[2] 737	168,605	20.3	22.7
501 to 1,000	121	85,374	3.3	11.5
1,001 to 5,000	73	152,149	2.0	20.5
Over 5,000	22	269,522	0.6	36.3
Anthracite, all classes	[1] 185	173,504	100.0	100.0
20 or less	67	419	36.2	0.2
21 to 50	19	612	10.3	0.4
51 to 100	19	1,459	10.3	0.8
101 to 500	[2] 44	[2] 12,082	23.8	7.0
501 to 1,000	18	11,857	9.7	6.8
1,001 to 5,000	8	13,061	4.3	7.5
Over 5,000	10	134,014	5.4	77.2
Bituminous, all classes	[1] 3,453	569,789	100.0	100.0
20 or less	1,539	12,345	44.6	2.2
21 to 50	675	18,988	18.7	3.3
51 to 100	466	33,820	13.5	5.9
101 to 500	693	156,523	20.1	27.5
501 to 1,000	103	73,517	3.0	12.9
1,001 to 5,000	65	139,088	1.9	24.4
Over 5,000	12	135,508	0.3	23.8

[1] Six anthracite and 50 bituminous operators reported no labor hired directly, and one anthracite operator failed to report the number of wage earners.

[2] Includes two operators employing less than 100 wage earners, in order to avoid disclosure of individual operations.

Classification of operators according to the number of acres of land controlled.—The table below gives the number of operators in 1909 holding specified areas of land, together with the total holdings of each group. River dredge operators, washery operators reporting only culm banks held, and mine operators failing to report acreage, are excluded. Not only coal land, but timber tracts and other holdings are included. However, the bituminous operators held relatively little noncoal bearing land, and the Pennsylvania anthracite operators, who reported a considerable proportion of barren acreage, are classified in Table 26 according to their holdings of coal land.

Table 14

ACRES OF LAND (COAL AND OTHER) PER OPERATOR.	NUMBER.		PER CENT OF TOTAL.	
	Operators.	Acres of coal and other land controlled.	Operators.	Acres of coal and other land controlled.
Total, all classes	[1] 3,593	[2] 8,213,767	100.0	100.0
Less than 100 acres	1,275	49,939	35.5	0.6
100 to 1,000 acres	1,485	564,151	41.3	6.9
1,000 to 10,000 acres	703	1,956,755	19.6	23.8
10,000 to 100,000 acres[3]	119	2,956,532	3.3	36.0
100,000 acres and over	11	2,686,390	0.3	32.7
Anthracite, all classes	[1] 137	[2] 476,759	100.0	100.0
Less than 100 acres	47	1,693	34.3	0.4
100 to 1,000 acres	55	19,801	40.1	4.2
1,000 to 10,000 acres	27	61,803	19.7	13.0
10,000 to 100,000 acres[3]	8	393,462	5.8	82.5
Bituminous, all classes	[1] 3,456	[2] 7,737,008	100.0	100.0
Less than 100 acres	1,228	48,246	35.5	0.6
100 to 1,000 acres	1,430	544,350	41.4	7.0
1,000 to 10,000 acres	676	1,894,952	19.6	24.5
10,000 to 100,000 acres	111	2,563,070	3.2	33.1
100,000 acres and over	11	2,686,390	0.3	34.7

[1] Fifty-five operators of anthracite washeries and river dredges are excluded together with 47 bituminous operators who failed to report acreage controlled.

[2] Sixty-four acres of farm lands reported by operators of river dredges are excluded and a duplication of 31,082 acres is included, of which 11,689 acres are in the anthracite total and 19,393 acres in the bituminous. See Introduction.

[3] Includes 1 operator reporting more than 100,000 acres, in order to avoid the disclosure of individual operations.

The table shows that 11 concerns, each of which reported 100,000 acres and over, together held nearly 2,700,000 acres, or almost one-third of the total acreage reported by all operators in the United States; and that 130 operators, each reporting 10,000 acres and over, together held over 5,600,000 acres, or more than two-thirds of the total acreage reported. At the other extreme, 1,275 operators, each reporting less than 100 acres, while comprising more than one-third of the total number of operators, together held less than 50,000 acres, an insignificant fraction of the total.

The control of anthracite land is far more concentrated than that of bituminous. The significance of the difference in degree of concentration of tenure is not fully indicated by a comparison of the percentages in the table, since the total area of all anthracite deposits is small and no extensive new fields are known which may be exploited by new operating companies, while, on the contrary, there are great areas of bituminous coal, entirely undeveloped and not controlled by any present operators, upon which thousands of new mines may be opened in the future by new mining companies.

DISTRIBUTION OF EXPENSES.

The distribution of the total reported expenses for 1909 among the several items is shown by the following table of percentages. The absolute numbers are given in Table 1. As to the significance of total reported expenses see the remarks on page 181 under "Expenses."

Table 15

CLASS OF EXPENSES.	PER CENT OF TOTAL REPORTED EXPENSES.				
			Bituminous.[1]		
	All mines.[1]	Anthracite.	Total.	Mines without coke manufacture.	Mines with coke manufacture.
Total (gross expenses)	100.0	100.0	100.0	100.0	100.0
Salaries	4.9	3.3	5.5	5.5	5.6
Wages	72.3	66.3	74.4	75.7	70.3
Supplies	13.9	19.2	12.0	11.4	14.0
Royalties	3.8	5.7	3.1	3.2	2.5
Miscellaneous	5.2	5.5	5.0	4.2	7.5

[1] The cost of coal purchased for coking at the mines has not been considered in calculating these percentages.

From these figures it is apparent that wages constitute by far the greater part of the expense of mining coal. This item covered 66.3 per cent of the total (gross) expenses reported for the anthracite industry in 1909 and 74.4 per cent of the total for the bituminous.

The next largest item is cost of supplies, including fuel and rent of power. The cost of colliery supplies constitutes a much higher percentage of expenses for anthracite operators than for bituminous. This would remain true even after deducting the cost of explosives and oil sold to miners, which is included in the total cost of supplies reported by anthracite operators. This higher percentage is explained by the fact that the methods of mining and preparing coal are more costly for anthracite than for bituminous. The higher percentage for supplies at mines with coke manufacture than for mines without coke production is due to the fact that the cost of supplies reported by the former group of mines includes the cost of coke yard and oven supplies.

The greater proportionate payment for royalties in anthracite as compared with bituminous mining is of course due, primarily, to the higher rate of royalty prevailing in the anthracite fields.

PERSONS ENGAGED IN THE INDUSTRY.

Occupational status: 1909.—The following table (which excludes penal institutions and the few mines with incomplete reports) shows the occupational status of the persons engaged in coal mining, including those employed in coke manufacture at the mines. The statistics for wage earners relate to December 15, 1909, or the nearest representative day. The relation between this number and the average number employed for the year is discussed in connection with Table 18. As shown by the table, in 1909 wage earners constituted 96.4 per cent of the total number of persons engaged in the industry. In view of the large scale of production prevailing, the methods of mine operation, and the simplicity of the marketing branch of the business, the small proportion of persons other than wage earners is only to be expected. The number of proprietors and firm members reported as performing manual.labor, 1,785, represents mainly those interested in little local bituminous mines employing few or no wage earners.

Table 16

OCCUPATIONAL CLASS.	NUMBER.			PER CENT DISTRIBUTION.		
	Total.	Anthracite.	Bituminous (including coke manufacture at mines).	Total.	Anthracite.	Bituminoue.
All classes	**770,681**	**178,004**	**592,677**	**100.0**	**100.0**	**100.0**
Proprietors and firm members	3,927	188	3,739	0.5	0.1	0.6
Officers of corporations	2,486	171	2,315	0.3	0.1	0.4
Superintendents and managers	6,522	956	5,566	0.8	0.5	0.9
Clerks and other salaried employees	14,453	3,185	11,268	1.9	1.8	1.9
Wage earners, number Dec. 15, 1909, or nearest representative day	743,293	173,504	569,789	96.4	97.5	96.1
Proprietors and firm members performing manual labor (included above)	1,785	72	1,713	......	......	......

Classification of wage earners according to occupation.—The following table gives the number and percentage of wage earners employed in various occupations outside and inside, December 15, 1909, or the nearest representative day. For mines with coke manufacture the data include wage earners engaged in coke making. Penal institutions and mines with incomplete reports are not considered in this table.

The table gives a total of 743,000 wage earners employed in coal mining and coke manufacture at the mines in 1909. Of this total, 173,000 were employed in the anthracite and 570,000 in the bituminous industry. About 600,000 wage earners, or four-fifths of the total, were employed below ground and about 143,000 or one-fifth, above ground. Of those below ground, 475,000 were in bituminous mines and 125,000 in anthracite; while, of those outside the mines, 94,000 were bituminous employees and 49,000 were anthracite. However, this total of outside bituminous wage earners includes 27,000 coke employees; if these are deducted, it appears that 12.4 per cent of the bituminous mine workers were employed above ground and 87.6 per cent below ground, while the corresponding percentages for anthracite workers were 28.1 and 71.9, respectively. The higher proportion of outside employees in the anthracite as compared with the bituminous industry is chiefly due to the relatively greater amount of labor expended in crushing, cleaning, and preparing anthracite for market.

Table 17

CLASS OF WAGE EARNERS.	TOTAL.		ANTHRACITE.		BITUMINOUS.					
					Total.		Mines without coke manufacture.		Mines with coke manufacture.	
	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All classes	**743,293**	**100.0**	**173,504**	**100.0**	**569,789**	**100.0**	**435,414**	**100.0**	**134,375**	**100.0**
Outside	**142,843**	**19.2**	**48,753**	**28.1**	**94,090**	**16.5**	**51,260**	**11.8**	**42,830**	**31.9**
Inside	**600,450**	**80.8**	**124,751**	**71.9**	**475,699**	**83.5**	**384,154**	**88.2**	**91,545**	**68.1**
Engineers, firemen, and mechanics	42,098	5.7	12,272	7.1	29,826	5.2	22,154	5.1	7,672	5.7
Outside	34,141	4.6	9,752	5.6	24,389	4.3	18,051	4.1	6,338	4.7
Inside	7,957	1.1	2,520	1.5	5,437	0.9	4,103	0.9	1,334	1.0
Miners and miners' helpers (all inside)	467,179	62.9	83,156	47.9	384,023	67.4	314,226	72.2	69,797	51.9
Other wage earners 16 years of age and over	227,048	30.5	74,829	43.1	152,219	26.7	96,576	22.2	55,643	41.4
Outside	104,651	14.1	35,767	20.6	68,884	12.1	32,804	7.5	36,080	26.9
Inside	122,397	16.5	39,062	22.5	83,335	14.6	63,772	14.6	19,563	14.6
Boys under 16 years of age	6,968	0.9	3,247	1.9	3,721	0.7	2,458	0.6	1,263	0.9
Outside	4,051	0.5	3,234	1.9	817	0.1	405	0.1	412	0.3
Inside	2,917	0.4	13	(1)	2,904	0.5	2,053	0.5	851	0.6

[1] Less than one-tenth of 1 per cent.

Miners and miners' helpers in the anthracite industry constitute a smaller part, while engineers, firemen, and mechanics, and other employees 16 years of age and over, constitute a larger part of the total than the corresponding classes in bituminous mines. This is more clearly shown if the comparison is limited to the inside men. Of the total number of inside wage earners, miners and their helpers constituted in anthracite mines, 66.7 per cent, and in bituminous mines, 80.7 per cent; engineers, firemen, etc., 2 per cent and 1.1 per cent, respectively; other wage earners 16 years and over, 31.3 per cent and 17.5 per cent. This difference in the composition of the inside forces of the two classes of mines reflects the larger scale of production, the further division of labor, and the greater complexity of organization in the anthracite mines, as compared with the bituminous.

Boys under 16 years of age constituted less than 1 per cent of all wage earners employed in the coal mining industry as a whole. Nearly half those reported were employed in the anthracite collieries, practically all above ground, while of those employed by bituminous operators by far the greater number were working below ground.

Wage earners employed, by months.[1]—The following table gives the number of wage earners employed on the 15th day of each month during the year 1909. Penal institutions and incomplete reports are excluded from this table.

In general, the smaller number of wage earners employed in the spring and early summer months, reflects the seasonal fluctuation in the consumption of coal. In this respect the anthracite industry shows much greater steadiness of employment than the bituminous, with the number employed in the minimum month, August, equaling 95.8 per cent of the number in March, the maximum month. The anthracite producers obtain this regularity of operation partly by reducing the price of anthracite in the spring, in order to induce consumers to buy and store their supplies in the warmer months, and partly by storing large quantities of coal themselves. No such action is ordinarily taken by bituminous producers and the operation of their mines is more irregular. In this regard the mines combining coal mining and coke manufacture have an advantage over those without coke manufacture, since the consumption of furnace and foundry coke is not subject to seasonal fluctuations such as affect the use of coal for fuel, and, normally, the coke making mines operate more regularly.

Table 18

MONTH.	WAGE EARNERS EMPLOYED AT COAL MINES.									
	Aggregate.		Anthracite.		Bituminous.					
					Total.		Mines without coke manufacture.		Mines with coke manufacture.	
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January	691,244	94.8	172,847	99.9	518,397	92.6	394,661	93.0	123,736	91.2
February	686,322	94.1	172,505	99.7	513,817	91.7	390,332	92.0	123,485	91.0
March	679,791	93.2	173,025	100.0	506,766	90.5	383,003	90.2	123,763	91.2
April	649,870	89.1	168,009	97.1	481,861	86.0	361,899	85.3	119,962	88.4
May	646,592	88.7	168,137	97.2	478,455	85.4	359,174	84.6	119,281	87.9
June	652,894	89.5	168,964	97.7	483,930	86.4	362,893	85.5	121,037	89.2
July	659,434	90.4	167,425	96.8	492,009	87.8	369,599	87.1	122,410	90.2
August	667,146	91.6	165,740	95.8	501,406	89.5	377,174	88.9	124,232	91.6
September	685,234	94.0	166,003	95.9	519,231	92.7	393,150	92.6	126,081	92.9
October	704,939	96.7	169,961	98.2	534,978	95.5	405,772	95.6	129,206	95.2
November	720,341	98.8	170,601	98.6	549,740	98.2	418,401	98.6	131,339	96.8
December	729,273	100.0	169,184	97.8	560,089	100.0	424,407	100.0	135,682	100.0

In 1909, in the bituminous industry, the maximum number of men, 560,089, was employed in December, and the minimum, 478,455, equal to 85.4 per cent of the maximum, in May. The number employed in December was considerably larger than the number employed in January, although the latter was also a month of heavy coal consumption and normally should have about equaled December in numbers employed. In January, however, the industry had not yet fully recovered from the preceding financial depression, while in December demand and output had much increased. This change in conditions is further shown by the fact that the mines with coke production had relatively fewer men working at the beginning of the year than the mines without coke production. The operation of many of these mines depends chiefly on the demand for coke from iron and steel manufacturing enterprises, which are usually affected greatly by any industrial disturbance. The anthracite collieries show no such difference in numbers employed between the beginning and the end of 1909, since this industry depends chiefly on consumption for domestic purposes, which is little affected by industrial depression.

Hours of labor.—The following classification gives for 1909 the number of mines operated specified numbers of hours per day or per shift, and the per cent of wage earners employed in mines of each class. River dredges, penal institutions, mines employing no wage earners, and mines with incomplete reports are excluded. The wage earners employed in coke manufacture at mines are included in calculating the percentages of wage earners given.

This classification is based on the normal hours of operation per day or per shift, and occasional departures from this standard have not been considered. The percentages shown in the last three columns indicate the distribution of the total number of wage earners among mines of the different classes. In this connection it must be distinctly understood that the census inquiry asked only the prevailing hours of labor for the mine, and took no account of exceptions in the nature of employment of some wage earners for more or fewer hours than those of the bulk of employees. Sometimes one class of wage earners has regularly a different working time from that of another class. However, the table may be taken as indicating approximately the actual distribution of wage earners according to the number of hours worked per day.

---

[1] The table gives a total of 729,273 wage earners employed December 15, 1909, while Table 16, showing the specific occupations, gives a total of 743,293 wage earners employed on December 15, 1909, or the nearest representative day. This difference of 14,020, or less than 2 per cent, is due to the fact that these figures were obtained from two separate inquiries on the census schedule. The first of these inquiries asked for the specific classes of wage earners employed on December 15, or the nearest representative day. If the mine was not operated on December 15, or was running under abnormal conditions, then in answer to this inquiry the operator reported the number of men employed on the nearest day when conditions were normal. The second inquiry asked for the number of wage earners on the 15th day of each month, which might or might not be a normal day. In all other tables in this section giving statistics of wage earners the number obtained from the occupational inquiry has been used, since it is considered that this number more closely approximates the true total of wage earners depending upon the industry for a livelihood than does the number actually employed on any one day.

The classification shows that practically all wage earners in anthracite mines in 1909 were working on a 9-hour basis. This corresponds to the terms of the agreement between the operators and the mine workers. In the bituminous industry nearly three-fifths of all wage earners reported were employed at mines operated 8 hours per day, about one-fourth at mines operated 10 hours per day, and about one-eighth at mines operated 9 hours per day. No mines were reported in operation 11 hours per day, and less than 1 per cent of the total number of wage earners were working at mines operated 12 hours per day.

MINES CLASSIFIED ACCORDING TO HOURS OF OPERATION PER DAY OR PER SHIFT: 1909.

Table 19 NUMBER OF HOURS MINES WERE NORMALLY OPERATED PER DAY OR PER SHIFT.	NUMBER OF MINES.			PER CENT OF MINES.			PER CENT OF WAGE EARNERS EMPLOYED IN MINES WITH PREVAILING HOURS SPECIFIED.		
	Total.	Anthracite.	Bituminous.	Total.	Anthracite.	Bituminous.	Total.	Anthracite.	Bituminous.
Total	**6,338**	**360**	**5,978**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Less than 8 hours	68	3	65	1.1	0.8	1.1	0.4	0.3	0.4
8 hours	3,757	10	3,747	59.3	2.8	62.7	45.2	1.4	58.5
9 hours	1,146	336	810	18.1	93.3	13.5	33.4	98.0	13.8
10 hours	1,279	9	1,270	20.2	2.5	21.2	19.5	0.3	25.4
12 hours	9	......	9	0.1	......	0.2	0.7	......	0.9
Not specified	79	2	77	1.2	0.6	1.3	0.8	(1)	1.1

[1] Less than one-tenth of 1 per cent.

POWER.

The following table shows the number and total horsepower of engines, water wheels, and other motors used in 1909. So-called "rented power" represents that of electric motors, usually owned by the mine operator, which are run by current furnished by some outside concern. The table does not cover the few mines with incomplete reports or those operated by penal institutions. The statistics for mines with coke manufacture include power used in the coke business, which, however, is small in amount.

The total primary horsepower for the industry in 1909 was 1,904,154, of which 676,753 was reported for anthracite and 1,227,401 for bituminous mines. Practically all power used was owned, the horsepower of electric motors operated by purchased current amounting to only 1.4 per cent of the total primary power used. Nearly all the primary power was generated by steam engines. The number of electric motors in use at the mines, most of which are operated by current generated by the mine operators themselves, is large.

The anthracite operators use relatively much more power than the bituminous. The average primary power per mine for anthracite mines exclusive of the small river dredges in 1909 was 1,877 horsepower; for bituminous mines without coke manufacture, 231 horsepower; and for those with coke manufacture, 494 horsepower. The higher figure for anthracite is due not only to the fact that the average output of coal per mine is much greater than for bituminous mines; but is also attributable to the greater depth and extent of the mine workings and the greater volume of water to be pumped, and to the further fact that the method of crushing, screening, and washing anthracite requires relatively far more power than is similarly used at bituminous mines. The high average per mine for mines making coke, as compared with mines without coke manufacture, is due chiefly to their larger scale of production, and only in small degree to the additional power required by the coke yards.

Table 20 KIND.	Total.	Anthracite.	BITUMINOUS.		
			Total.	Mines without coke manufacture.	Mines with coke manufacture.
Primary horsepower, total	**1,904,154**	**676,753**	**1,227,401**	**910,778**	**316,823**
Owned	1,877,450	675,343	1,202,107	896,365	305,742
Rented	26,704	1,410	25,294	14,413	10,881
Owned power:					
Steam engines—					
Number	19,318	7,580	11,738	9,309	2,429
Horsepower	1,874,001	674,571	1,199,430	894,070	305,360
Gas engines—					
Number	374	25	349	333	16
Horsepower	3,101	772	2,329	2,232	97
Water wheels—					
Number	7	....	7	5	2
Horsepower	334	....	334	59	275
Water motors—					
Number	2	....	2	1	1
Horsepower	14	....	14	4	10
Rented power—electric motors run by purchased current:					
Number	872	32	840	517	323
Horsepower	26,704	1,410	25,294	14,413	10,881
Average primary horsepower per mine[1]	385	1,877	268	231	494
Electric motors run by current generated by operator (secondary power)—					
Number	10,869	1,152	9,717	6,665	3,052
Horsepower	375,386	46,088	329,298	212,610	116,688

[1] Excludes Pennsylvania anthracite river dredges and bituminous mines operated without mechanical power.

PART II.—PENNSYLVANIA ANTHRACITE COAL.

INTRODUCTION.

This section deals with the statistics of Pennsylvania anthracite coal. Anthracite is also mined in the Rocky Mountain fields, but their output in 1909 was very small, and the separate statistics for the industry there are confined to the figures given in the detailed table, Part IV. The tables of this section cover only producing operations; the statistics of nonproducing collieries are given in Table 62.

Location of the anthracite deposits.—The anthracite coal of Pennsylvania is produced in the northeastern part of the state, in the counties of Carbon, Columbia, Dauphin, Lackawanna, Luzerne, Northumberland, Schuylkill, Sullivan, Susquehanna, and Wayne. About 85 per cent of the output comes from Lackawanna, Luzerne, and Schuylkill Counties. The deposits are divided into three general producing regions. The Upper Region, except some small outlying deposits in Sullivan County, extends from northeast to southwest in a narrow belt coinciding roughly with the valleys of the Lackawanna and Susquehanna Rivers, from near Forest City to the vicinity of Shickshinny, and contains about 176 square miles. The Middle Region extends approximately east and west through Columbia, Schuylkill, Luzerne, and Northumberland Counties, the coal occurring in several irregular valleys containing about 127 square miles of productive measures. The Southern Region embraces about 180 square miles in Carbon, Schuylkill, and Dauphin Counties. (See map on page 203.)

Methods of production.—Anthracite coal is now recovered by three methods: Mining, washing culm banks, and dredging from stream beds. The culm banks are dumps of slate and dirt from the mines, containing more or less coal. These were formerly considered valueless, but in recent years it has been found profitable to recover the coal contained by washing. In 1909 more than 4,300,000 tons of coal were thus obtained. The coal dredged from the streams comes from old culm banks that have been partially washed away. The action of the flowing water has effected a natural separation of the coal from its accompanying refuse, and where this coal has been deposited along the stream beds it can be recovered by dredging. The total quantity so recovered is not large, and in fact the industry is confined to small operators supplying chiefly local markets. Dredging is necessarily dependent on the seasons and the stage of the rivers. Statistics of these dredge operators are not included in any of the tables for Pennsylvania anthracite, except Table 21.

Number of collieries.—The word "colliery" is used in this chapter to designate a single producing unit. If the coal from several mine openings was prepared at one breaker, this has been counted as one colliery. Each washery operated independently of fresh mine production, that is, recovering coal from culm banks, has been counted as a colliery, but washeries operated as a part of the equipment for cleaning freshly mined coal have not been counted separately. Of the 357 collieries reported in Table 21, 52 were washeries recovering coal from culm piles independently of fresh mine production and 305 were breakers at active mines. In addition, incomplete reports were received for 3 mines and 4 washeries, which have not been included in any of the tables of this section.

GENERAL SUMMARY: 1909.

The general statistics of the Pennsylvania anthracite industry for the calendar year 1909 may be found in Table 62. The following table summarizes the more important details:

Table 21

	Total.	Collieries.[1]	River dredges.[2]
Number of operators	189	139	50
Number of collieries or dredges	420	357	63
Acres of coal land controlled	[3] 273,499	[3] 273,499	....
Owned	183,044	183,044	....
Held under lease	101,430	101,430	....
Capital	$246,713,318	$246,599,761	$113,557
Total gross expenses	$139,110,444	$139,048,811	$61,633
Deduct charges to miners for explosives, oil, and blacksmithing	$4,864,844	$4,864,844	....
Total not expenses	$134,245,600	$134,183,967	$61,633
Coal:			
Total tons produced (2,240 pounds)	72,215,273	72,109,034	106,239
Value at mines	$148,957,894	$148,866,422	$91,472
Total tons marketed	64,524,302	64,419,923	104,379
Value at mines	$145,880,526	$145,791,493	$89,033

	Total.	Collieries.[1]	River dredges.[2]
Number of wage earners	173,263	173,098	165
Total primary horsepower	676,128	675,196	932
Gross expenses by items:			
Services	$96,742,395	$96,710,289	$32,106
Salaries	4,572,489	4,569,565	2,924
Wages	92,169,906	92,140,724	29,182
Supplies	26,662,088	26,640,773	21,315
Fuel and rent of power	3,189,279	3,183,908	5,371
Other	23,472,809	23,456,865	15,944
Royalties	7,969,785	7,967,209	2,576
Miscellaneous	7,736,176	7,730,540	5,636

---

[1] Exclusive of 3 operators with 3 mines and 4 washeries, producing 94,871 tons, valued at $69,848, for which capital, number of employees, and operating expenses were not reported.

[2] Statistics of river dredges are not included in any subsequent table of Part II.

[3] The total is exclusive of a duplication of 10,975 acres in figures for owned and leased acreage. See page 181, "Coal land controlled."

The total production of Pennsylvania anthracite in 1909 was 72,310,144 long tons, of which the concerns covered by the above table produced 72,215,273 tons, while 94,871 tons were reported by operators who furnished incomplete reports. Of the total shown in the table 67,776,000 tons (in round numbers) were the product of mines proper, 4,333,000 tons that of washeries not connected with mines, and 106,000 tons that of river dredges. The total value reported for these 72,215,273 tons was $148,957,894 and the total gross expenses were $139,110,444, of which 66.3 per cent was for wages. The number of wage earners employed was 173,263, and the operators used a total of 676,000 primary horsepower.

PROGRESS OF THE INDUSTRY.

In Table 22 the recent progress of the anthracite industry is shown by various items selected from the census returns of 1889 and 1909, which have been rendered comparable by the following adjustments: 19 idle collieries and 49 small local operations have been deducted from the total number of collieries given for 1889; the salaries paid to foremen have been deducted from the wages for 1889, since in 1909 the payments to such foremen were included in salaries. The cost of fuel was included in the cost of supplies for 1909 but not for 1889; but no adjustment has been made on this account because in 1889 the refuse coal burned beneath the boilers was unmarketable, while in 1909 the conditions of preparing and selling anthracite had so changed that such refuse had a distinct value, and most companies were charging to operating expenses the value of coal used for power.

COMPARATIVE STATISTICS OF PENNSYLVANIA ANTHRACITE COLLIERIES: 1909 AND 1889.

Table 22.	1909	1889	INCREASE.	
			Amount.	Per cent.
Number of collieries	357	[1] 343	14	4.1
Acres of coal and other land controlled	[2] 464,210	213,938	250,272	117.0
Owned	316,711	107,282	209,429	195.2
Held under lease	159,188	106,656	62,532	49.3
Capital	$246,599,761	$161,784,473	$84,815,288	52.4
Gross expenses	$139,048,811	$61,109,958	$77,938,853	127.5
Wages	$92,140,724	$37,768,431	$54,372,293	144.0
Colliery supplies	$26,640,773	$10,822,363	$15,818,410	146.2
Tons of coal marketed (2,240 pounds)	64,419,923	37,146,456	27,273,467	73.4
Value at mines of coal marketed	$145,791,493	$65,721,578	$80,069,915	121.8

[1] Exclusive of 19 which were idle during the year, 49 small diggings and washeries supplying local trade, and 18 new establishments in course of construction.

[2] The total is exclusive of a duplication of 11,689 acres in figures for owned and leased acreage. See page 181, "Coal land controlled."

The quantity of anthracite marketed increased from 37,146,000 long tons in 1889 to 64,420,000 in 1909, or 73.4 per cent. The value of the coal marketed increased 121.8 per cent, the average value per ton rising from $1.77 to $2.26. The total reported expenses increased 127.5 per cent, while wage payments increased 144 per cent and the cost of colliery supplies 146.2 per cent. At the same time the average expense per ton also materially increased. Considering the entire production, both the tonnage marketed and that consumed at the collieries, the average gross expense per ton reported in 1889 was $1.50, while in 1909, for all collieries, it was $1.93. But in 1909, 4,333,000 tons of coal were produced from culm banks, while practically none was so produced in 1889. Table 28, which gives separate statistics for mines as distinguished from washeries, shows that the average gross expense per ton mined in 1909 was $2.03, or $0.53 more than in 1889. The increase in the cost of production, however, was probably even greater, since in 1909 the tonnage reported included small sizes of coal which in 1889 were not marketable and were not included, while for both years the expenses reported, of course, necessarily included the expense of producing the entire output, both of salable and unsalable sizes. This increase has all been in wage payments and cost of supplies, and, speaking broadly, is accounted for by the greater expense of working deeper deposits and measures generally thinner than in 1889, and by advances in the rates of wages and the prices of colliery supplies.

The number of collieries operated increased but little. Indeed, if the 52 washeries recovering coal from culm banks in 1909 are excluded, there were but 305 mines proper, as compared with 343 in 1889. The average output per mine has largely increased. If comparison is restricted to mines proper by excluding from the figures for 1909 the 4,333,000 long tons recovered by washeries, the average production per mine in 1909 (including the coal used for steam and heat, as well as that marketed) was about 222,000 tons, as compared with about 118,000 tons in 1889.

RAILWAY AFFILIATION OF OPERATORS.

The affiliation of coal producers with railways, by affecting the distribution and consumption of their product, may also influence materially the conditions of operation. The following table gives the principal statistics of anthracite operators classified according to their affiliation with railways. This classification, as stated in connection with Table 11, was based on official information.

The 11 coal mining concerns affiliated with railroads reported 84.4 per cent of the total coal land in 1909, 75.7 per cent of the total output of anthracite, and 78.2 per cent of the total number of wage earners reported for the industry. Their average acreage of coal land controlled per operator was more than 20,000 acres, as compared with an average of less than 350 acres for the unaffiliated operators, and their average annual output per operator was nearly 5,000,000 tons, as compared with less than 140,000 tons for the other operators. The difference in the size of the collieries of the two groups is indicated by the fact that these 11 concerns, affiliated with the anthracite carrying railroads, show an average of 645 men employed and over 260,000 tons of coal produced per colliery, as compared with 256 men employed and less than 120,000 tons of coal produced per colliery by the unaffiliated operators.

STATISTICS OF PENNSYLVANIA ANTHRACITE OPERATORS AFFILIATED AND UNAFFILIATED WITH RAILROADS: 1909.

Table 23	Total.	Operators affiliated with railroads.	Unaffiliated operators.
Number of operators	139	11	128
Number of collieries (including washeries)	357	210	147
Acres of coal land controlled[1]	273,499	230,739	42,760
Owned	183,044	180,567	2,477
Held under lease	101,430	61,129	40,301
Leased by operators to each other	10,975	10,957	18
Capital	$246,599,761	$218,198,695	$28,401,066
Gross expenses	$139,048,811	$106,493,484	$32,555,327
Deduct charges to miners for explosives, oil, and blacksmithing	$4,864,844	$3,862,611	$1,002,233
Net expenses	$134,183,967	$102,630,873	$31,553,094
Royalties	$7,967,209	$4,219,299	$3,747,910
Total tons (2,240 pounds) of coal produced	72,109,034	54,616,158	17,492,876
Loaded at mines for shipment	62,630,012	47,617,579	15,012,433
Sold locally	1,789,911	960,589	829,322
Used at mines for steam and heat	7,689,111	6,037,990	1,651,121
Total value of coal at mines	$148,866,422	$113,779,555	$35,086,867
Employees:			
Salaried	4,297	3,262	1,035
Wage earners	173,098	135,407	37,691
Outside	48,505	35,713	12,792
Inside	124,593	99,694	24,899
Total primary horsepower	675,196	539,365	135,831

[1] Total is exclusive of duplication of acreage leased by operators to each other. See page 181, "Coal land controlled."

SCALE OF PRODUCTION.

Tables 12, 13, and 14 of Part I give statistics relating to the size of anthracite operating organizations, but include the Rocky Mountain anthracite mines and the Pennsylvania river dredges as well as the anthracite collieries proper; furthermore, Table 14 classifies operators on the basis of all land controlled. The following tables, classifying operators according to value of products and number of wage earners, not only confine the statistics to Pennsylvania colliery operators, but distinguish the operators as affiliated and unaffiliated with railroads; while the table classifying operators according to acreage controlled is based on holdings of coal land exclusive of barren areas.

Classification of operators according to value of coal produced: 1909.—Of the 139 anthracite operators in Pennsylvania in 1909, exclusive of those operating dredges, 19 produced less than $10,000 worth of products each; 49, from $10,000 to $100,000; 39, from $100,000 to $500,000; 15, from $500,000 to $1,000,000; 8, from $1,000,000 to $5,000,000; and 9, $5,000,000 or more. The following table distinguishes the 139 operators according as they are affiliated or unaffiliated with railroads, and classifies those of each group according to the value of coal produced per operator:

Table 24 VALUE OF COAL PRODUCED PER OPERATOR.	OPERATORS AFFILIATED WITH RAILROADS.		UNAFFILIATED OPERATORS.	
	Number of operators.	Value of coal produced.	Number of operators.	Value of coal produced.
Total	11	$113,779,555	128	$35,086,867
Less than $10,000			19	81,227
$10,000 to $100,000			49	2,141,855
$100,000 to $1,000,000			54	21,020,422
Over $1,000,000	11	113,779,555	6	11,843,363

Each of the companies affiliated with railroads reported an output valued at more than $1,000,000, and the average value of coal per company was more than $10,000,000. On the other hand, only 6 of the 128 unaffiliated operators reported an output valued at more than $1,000,000, and the average value of coal for these 6 operators was less than $2,000,000 each.

Classification of operators according to number of wage earners employed: 1909.—Table 13 gives the number of anthracite operators in the United States as a whole employing specified numbers of wage earners, together with the number of wage earners employed by each group. Table 25 presents a similar classification for Pennsylvania anthracite operators affiliated with railroads, and unaffiliated respectively. The river dredges, included in Table 13, are excluded from this table.

Table 25 NUMBER OF WAGE EARNERS PER OPERATOR.	OPERATORS AFFILIATED WITH RAILROADS.		UNAFFILIATED OPERATORS.	
	Number of operators.	Number of wage earners.	Number of operators.	Number of wage earners.
Total	11	135,407	128	37,691
100 or less			62	2,325
101 to 500			41	11,841
501 to 1,000			18	11,857
Over 1,000	11	135,407	7	11,668

All of the 11 operators connected with railroads were in the class of employers reporting more than 1,000 wage earners, with the average number employed per company exceeding 12,000 men. Among the unaffiliated operators, 7 reported more than 1,000 wage earners each, but the great majority of unaffiliated operators were relatively small employers of labor.

Classification of operators according to number of acres of coal land controlled: 1909.—The following table gives the principal facts regarding the control of coal lands and the accompanying coal production for Pennsylvania anthracite operators holding specified areas. Thirteen operators who reported their entire production from washing culm piles have been excluded from this table.

Table 26

	NUMBER OF ACRES OF COAL LAND CONTROLLED PER OPERATOR.				
	Total.	Less than 100 acres.	100 to 1,000 acres.	1,000 to 10,000 acres.	10,000 acres and over.
Number of operators	126	42	62	16	6
Acres of coal land controlled [1]	273,499	1,468	22,721	38,328	210,982
Owned	183,044	149	1,259	12,753	168,883
Held under lease	101,430	1,319	21,480	26,289	52,342
Average number of acres per operator	2,171	35	366	2,396	35,164
Total tons of coal produced (2,240 pounds)	68,558,720	663,366	10,474,306	13,295,247	44,125,801
Average per operator	544,117	15,794	168,940	830,953	7,354,300
Average per acre controlled	251	452	461	347	209
Tons sold locally	1,616,495	219,330	263,995	327,556	805,614
Per cent of total output	2.4	33.1	2.5	2.5	1.8

[1] Exclusive of duplication of land leased by operators to each other. (See Table 21.)

The above figures are of particular interest because the acreage of anthracite land is very limited and is practically all covered by the table. The tabulation shows that six large concerns controlled more than three-fourths of all the anthracite land reported. That they hold a considerable part of this area in reserve is clearly shown by a comparison of the average actual output of coal per acre controlled for the various groups. This average for the six largest holders was 209 tons per acre, or less than half as much as for the two groups of smallest holders, whose limited acreage precluded the holding of reserve areas.[1] The figures show not only greatly concentrated control of the anthracite deposits, but also show that the small and medium sized concerns are mining out their deposits much more rapidly than the largest concerns, so that increased concentration of the industry may occur in the future. Furthermore, the larger operators hold their lands chiefly through direct ownership, while all the other groups report much the greater portion of their acreage held under lease.

The table also indicates the importance to the small land holders of local sales of coal. The 42 operators each with less than 100 acres of coal land were limited by their restricted acreage to an average annual output of less than 16,000 tons each; but they were able to sell about one-third of their output locally. Much of this coal was retailed and brought better prices than could be secured for coal shipped to distant markets. This is of material assistance to these operators in offsetting the greater cost of small-scale production. The local markets, however, are by no means abandoned to these small operators by the large producers. On the contrary, of the total coal marketed locally, the 22 largest operators sold nearly three-fourths, though such local sales formed only a small proportion of their total output.

EXPENSES.

The analytical figures for the distribution of expenses at the anthracite collieries are presented in three tables. The first covers all classes of collieries combined, the second gives separate figures for mines and for washeries, and the third deals with royalties.

Distribution of expenses for all collieries: 1909.—The following table shows for all anthracite collieries, the average expenses per ton, and the percentage of gross expenses formed by the several items:

Table 27	Average expense per ton.	Per cent of total gross expenses.
Total net expenses	$1.86	....
Total gross expenses	1.93	100.0
Salaries	0.06	3.3
Wages	1.28	66.3
Supplies	0.37	19.2
Royalties	0.11	5.7
Miscellaneous	0.11	5.6

It will be noted from the above figures that the chief element of expense is services, salaries and wages together amounting to $1.34 per ton and comprising 69.6 per cent of the reported gross expenses in 1909. The next largest item was colliery supplies, including the cost of fuel and power. The average gross expense for this item was $0.37 per ton. As explained in the remarks under "Wages" and "Supplies" on page 182, the operators' net cost of supplies was somewhat less than the above amount.

The average cost per ton given for royalties, $0.11, must not be taken as the average rate of royalty, since the foregoing figure is computed from the total output of anthracite, but on the greater part of this total, namely, the coal produced from lands owned by operators, no royalty was paid. (See Table 29.)

Expenses and related data for mines and for washeries.—The expense of producing anthracite from mines is much greater than the expense of recovering coal by washing culm banks. In order to give separate data for these two kinds of operations, the following table has been prepared summarizing the principal statistics relating to expenses for mines and for washeries which were recovering coal from culm piles, independently of fresh mine production. As explained in the footnote on the following page, certain operations have necessarily been excluded from the table, and certain administrative expenses (relatively small in amount) have been apportioned to the mines and the washeries by estimate.[1]

---

[1] This average output per acre disregards variations in the original coal contents of the land and differences in the methods of mining. Variations in the thickness of the coal measures might readily cause considerable difference in the average output per acre, but in general the lands of the small holders are not underlaid by more productive coal measures than the lands of the large holders, so that the differences in the averages quoted above can not be attributed to this cause. Furthermore, the mining methods of the large operators are certainly not inferior to those of the small operators, and hence the smaller average output per acre for the large producers can not be accounted for in this manner.

Table 28	Mines.	Washeries.
Number of collieries	272	43
Total gross expenses	$114,613,120	$1,324,325
Less charges to miners for explosives, oil, and blacksmithing	$4,165,815	$251
Total net expenses	$110,447,305	$1,324,074
Tons (2,240 pounds) of coal produced	66,536,922	3,550,314
Value at mines	$121,248,635	$2,274,004
Wage earners, number [1]	144,639	1,712
Outside	38,244	1,712
Engineers, firemen, and mechanics	7,278	248
Others, 16 years and over	27,862	1,440
Boys under 16 years	3,104	24
Inside	106,395	…………
Engineers, firemen, and mechanics	1,987	…………
Miners	39,934	…………
Miners' helpers	32,588	…………
Others, 16 years and over	31,873	…………
Boys under 16 years	13	…………
Total primary horsepower	574,360	11,584
Gross expense by items:		
Services	$77,029,135	$728,106
Salaries	2,046,249	63,413
Wages	74,982,886	674,693
Supplies	21,864,411	387,657
Fuel and rent of power	2,501,620	91,375
Other	19,362,791	296,282
Royalties	7,187,342	122,938
Miscellaneous	8,532,232	85,624
Taxes, contract work, and sundries	3,211,123	57,775
Apportioned administrative expenses	5,321,109	27,849
Average value of coal per ton at collieries	$2.14	$0.64
Average net expense per ton	1.95	0.37
Average gross expense per ton	2.03	0.37
Salaries [2]	0.06	0.02
Wages [2]	1.34	0.19
Supplies	0.39	0.11
Royalties	0.13	0.03
Miscellaneous	0.11	0.02

[1] Exclusive of 1,486 wage earners employed on general work who could not be distributed, but the wages of these men were part of the administrative expenses apportioned.

[2] Includes the average amount of general office salaries and wages per ton.

This table shows an average gross expense for coal recovered by washeries of $0.37 per ton, as compared with $2.03 per ton for coal produced from mines. This low average expense for washeries is to be expected, since the recovery of coal from culm banks is largely mechanical, and few employees are needed. The average value of the washery product is likewise much below that of the mine output, which is due to the fact that most of the washery coal is of smaller, less valuable sizes.

Royalty payments: 1909.—The following table gives data regarding royalties:

Table 29	Tons of coal from leased land (2,240 pounds).	Royalty payments.	Average royalty per ton.
Total, all collieries	**15,705,262**	**$3,691,544**	**$0.24**
Mines	14,929,912	3,595,366	0.24
Washeries	775,350	96,178	0.12

This table does not cover all mines and washeries operating under lease, since the reports of some operators did not specify the tonnage of coal produced under lease with the royalty payments therefor, but the tonnage covered is sufficiently large to show prevailing conditions.

The rates of anthracite royalties vary according to the sizes of coal produced. The table shows that for coal from mines the average rate was about $0.24 per ton, and for coal washed from culm banks, with the greater proportion of small sizes, about $0.12 per ton.

WAGE EARNERS.

The more general statistics as to the employment of persons in anthracite collieries have already been presented in Table 16. Additional details are given in the following tables.

Employment of wage earners above and below ground for different classes of collieries: 1909.—At some collieries washeries are used as part of the breaker equipment for cleaning coal from the mines, while at other collieries the coal is cleaned by other means. This difference in equipment affects the employment of labor in the breakers. The following table, giving the number and per cent of wage earners employed outside and inside the mines for different classes of collieries, presents data bearing on this subject:[2]

Table 30	Collieries without washeries.	Collieries with washeries.	Washeries.
Wage earners, number, Dec. 15, 1909, or nearest representative day	112,834	31,805	1,712
Outside	31,242	7,002	1,712
Inside	81,592	24,803	………
Per cent of total	100.0	100.0	100.0
Outside	27.7	22.0	100.0
Inside	72.3	78.0	………

The table shows that in 1909 the collieries using washeries in the breakers employed but 22 per cent of their wage earners above ground as compared with 27.7 per cent thus employed in collieries cleaning coal by other means. While some other factors may also contribute to this result, the primary cause is doubtless the reduction in the number of breaker employees through the use of washeries.

---

[1] In 1909, 52 washeries were operated independently of fresh mine production, but the table deals with only 43 of these washeries. This is due to the fact that the reports for 9 washeries were combined by the operators with the reports for 33 mines, and of course these operations covered by combined reports were necessarily excluded from this analysis. Accordingly, 9 washeries with a total production of 862,012 tons and 33 mines with a total production of 11,159,786 tons have been excluded from the table. However, the number of operations and the total tonnage covered by the table are sufficiently large to give representative figures for each class of producing units.

Miscellaneous expenses given in this table include certain administrative expenses. These were salaries and other general office expenses reported by various companies as a total. In all other anthracite tables, which show expenses for the industry as a whole, these expenses could be and have been included under the proper heads of salaries, wages, taxes, rent of offices, etc., but in this table based on individual collieries it was necessary to distribute such general office expenses reported in toto for the company to the several collieries, in order that no part of the expenses should be omitted. For this purpose these administrative expenses were distributed in the proportion which the total expense of each colliery bore to the total expense of the company. While this method lowers in this table the total amount of salaries and wages reported as such, and increases the total amount of miscellaneous expense by an equal amount, as compared with other tables for anthracite, the total expenses as shown are substantially correct for the collieries covered by the table. Moreover, in the lower part of the table the average amounts of salaries and wages per ton have been calculated to include these general office salaries and wages, so that the averages shown approximate the actual average amounts and proportions of the various items given.

[2] The figures in this table are exclusive of the employees of the collieries omitted from Table 28, as explained in connection therewith.

Number of days collieries were operated: 1909.[1]—The following table gives the number of collieries which were operated specified numbers of days during the year 1909.

The table indicates the irregularity of employment in the anthracite collieries from day to day. Of the total number reported, 30.5 per cent were in operation more than 240 days, 54.9 per cent more than 210 days, and 74.2 per cent more than 180 days. Except in a few cases time was not lost in one continuous period of nonoperation, but the breakers were shut down for a day or two at more or less frequent intervals to permit repairs, to restrict output, or for other reasons. This feature of operation is not peculiar to anthracite, but is true generally of the entire coal mining industry.

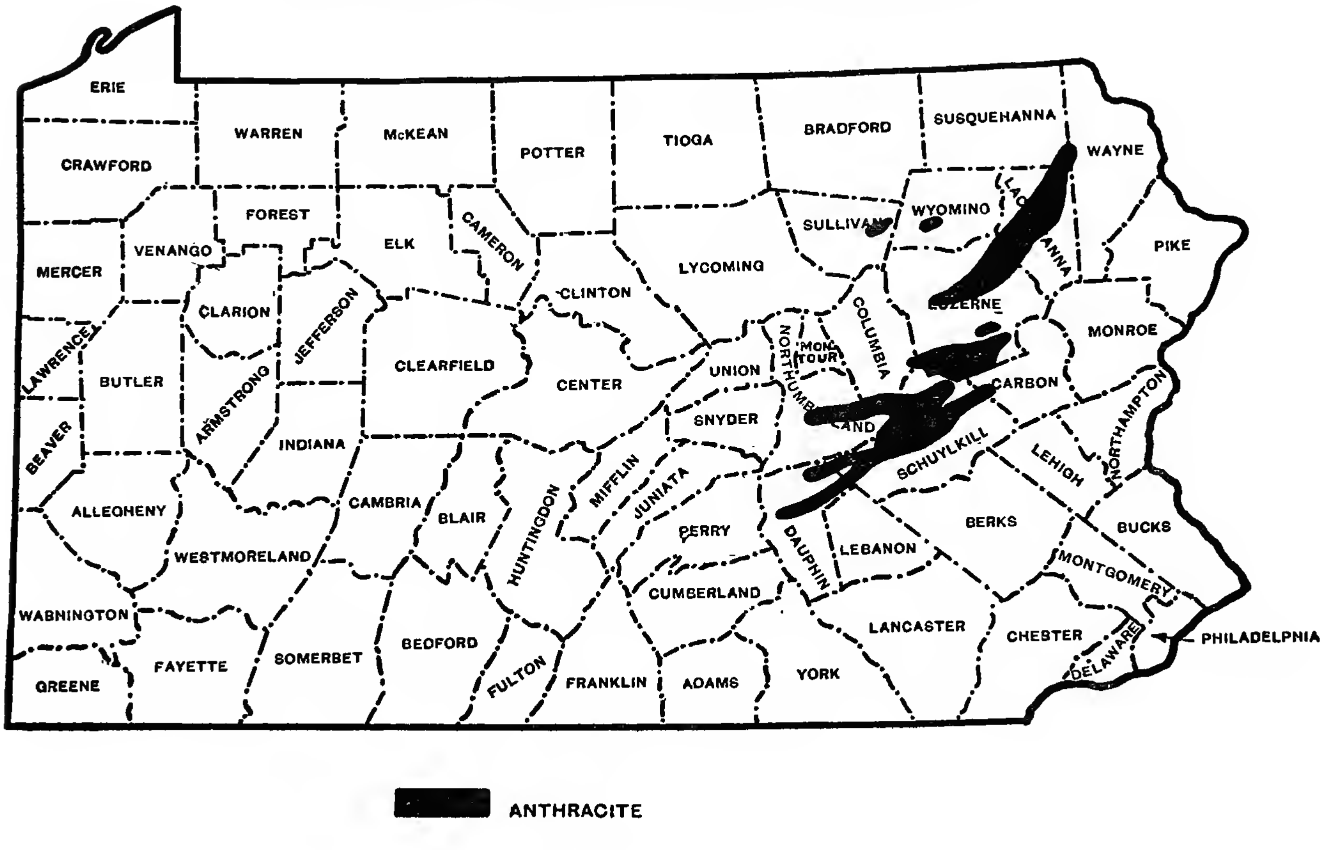
Table 31

NUMBER OF DAYS IN OPERATION.	Number of collieries.	NUMBER OF DAYS IN OPERATION.	Number of collieries.
Total	357	181 to 210	69
30 or less	5	211 to 240	87
31 to 60	3	241 to 270	54
61 to 90	8	271 to 300	42
91 to 120	14	301 to 330	12
121 to 150	27	331 to 365	1
151 to 180	34	Time not specified	1

---

[1] By agreement between the operators and their employees the anthracite collieries were operated on a 9-hour day basis.

MAP SHOWING ANTHRACITE FIELDS OF PENNSYLVANIA.



PART III.[1]—BITUMINOUS COAL.

GENERAL SUMMARY: 1909.

Statistics for mines with and without coke manufacture, by states.—Table 32 summarizes for the year 1909 the more important statistics of the bituminous coal industry as conducted in the various states, distinguishing mines operating coke ovens from those without such manufacture. For total production and value of bituminous coal for each state, including coal used for making coke, see Table 33.

SUMMARY OF STATISTICS FOR BITUMINOUS COAL MINES, DISTINGUISHING THOSE WITH AND WITHOUT COKE MANUFACTURE, BY STATES: 1909.

Table 32

STATE.	Number of mines.	Acres of coal land controlled.	Capital.	Expenses.	PRODUCTS.					Number of wage earners.	Primary horsepower.	Number of mining machines.	Number of completed coke ovens.
					Value of all products.	Coal, exclusive of coal made into coke.		Coke made at mines.					
						Tons (2,000 lbs.).	Value at mines.	Tons (2,000 lbs.).	Value at mines.				
All mines:													
United States...	**6,013**	**6,673,186**	**[1] $1,082,197,083**	**[2] $395,907,026**	**$427,962,464**	**326,792,907**	**$360,052,340**	**32,450,482**	**$67,483,182**	**569,789**	**1,227,401**	**13,685**	**86,341**
MINES WITHOUT COKE MANUFACTURE.													
United States.....	**5,365**	**4,883,867**	**[1] 697,357,137**	**301,451,898**	**316,894,935**	**280,852,040**	**315,659,346**	....	....	**435,414**	**910,778**	**11,602**	......
Alabama............	167	231,765	19,632,647	7,806,117	8,125,811	6,515,922	8,114,565	....	....	11,721	18,776	182	......
Arkansas............	69	54,359	[1] 2,256,942	3,630,526	3,508,590	2,373,619	3,508,490	....	....	5,462	10,508	12	......
Colorado............	140	65,047	18,046,592	9,394,037	10,208,042	6,994,756	10,208,042	....	....	10,368	27,350	258	......
Illinois............	631	552,396	[1] 75,257,667	51,697,504	53,030,545	50,570,503	52,999,918	....	....	74,445	166,174	1,372	......
Indiana............	322	140,244	[1] 35,937,961	14,906,831	15,018,123	14,723,231	14,984,616	....	....	22,357	45,910	672	......
Iowa............	311	70,192	[1] 7,212,033	12,816,076	12,682,106	7,725,679	12,679,225	....	....	17,623	19,118	7	......
Kansas............	202	80,459	[1] 6,262,203	9,778,297	9,835,614	6,895,660	9,835,567	....	....	12,791	19,707	16	......
Kentucky............	299	332,084	22,807,715	9,140,144	9,006,946	9,386,178	9,005,539	....	....	17,935	38,409	783	......
Maryland............	70	68,220	22,871,136	3,941,359	4,483,137	4,001,272	4,445,041	....	....	5,798	9,845	39	......
Michigan............	28	23,135	6,865,156	2,985,802	3,175,102	1,772,315	3,175,102	....	....	3,572	7,912	115	......
Missouri............	220	116,108	[1] 5,650,407	5,715,727	5,881,034	3,596,691	5,879,972	....	....	9,526	11,898	103	......
North Dakota........	53	10,356	1,023,278	523,410	563,212	364,536	563,212	....	....	857	2,025	20	......
Ohio............	640	406,336	64,131,141	27,153,497	27,353,663	27,518,764	27,274,403	....	....	44,405	97,422	1,637	......
Oklahoma............	104	75,744	[1] 5,672,886	6,535,441	6,185,078	3,113,149	6,184,420	....	....	8,814	26,316	34	......
Oregon............	9	3,122	642,410	238,246	225,026	83,704	225,026	....	....	251	1,109	27	......
Pennsylvania........	1,179	1,338,003	[1] 227,746,738	79,351,941	85,773,883	85,103,949	85,749,052	....	....	116,074	238,250	4,471	......
Tennessee............	129	329,650	9,830,983	5,185,588	5,130,791	4,657,257	5,130,791	....	....	8,470	11,580	167	......
Texas............	47	125,774	5,894,898	2,812,079	3,136,004	1,824,742	3,134,720	....	....	4,234	6,217	11	......
Virginia............	44	35,190	21,846,844	1,628,096	1,379,924	1,490,135	1,379,924	....	....	3,061	5,214	57	......
Washington..........	51	83,313	[1] 13,040,936	6,205,090	8,915,528	3,496,242	8,915,528	....	....	5,857	16,252	18	......
West Virginia........	479	565,457	[1] 77,677,068	24,327,363	23,330,421	27,166,931	23,330,248	....	....	36,463	79,238	1,387	......
Wyoming............	65	64,783	[1] 7,609,229	8,146,526	9,721,134	6,294,596	9,721,134	....	....	7,839	28,071	121	......
All other states [3].....	106	112,230	[1] 21,210,879	7,532,199	9,225,221	4,982,209	9,214,811	....	....	7,491	23,477	93	......
MINES WITH COKE MANUFACTURE.													
United States.....	**648**	**1,689,219**	**384,839,946**	**[2] 94,456,130**	**112,067,529**	**46,140,867**	**44,392,994**	**32,450,482**	**67,483,162**	**134,376**	**316,623**	**2,083**	**86,341**
Alabama............	36	367,494	39,969,749	[2] 9,062,318	10,333,622	2,396,543	2,662,911	2,883,774	7,670,711	11,758	35,308	118	8,607
Colorado............	15	27,895	12,488,341	[2] 4,885,458	5,574,155	1,991,393	2,275,494	1,061,868	3,298,590	5,093	6,735	1	3,281
Kentucky............	11	32,585	1,892,818	1,031,805	996,535	1,089,789	916,902	38,503	80,633	1,720	5,905	124	374
Pennsylvania........	330	335,534	189,851,892	[2] 48,809,122	61,692,534	18,425,118	17,566,627	22,499,706	43,937,062	68,334	166,404	1,254	49,510
Connellsville district	238	116,520	127,652,905	34,120,088	46,908,398	[4] 8,622,591	7,747,190	20,207,354	39,141,363	46,735	111,192	470	42,777
Tennessee............	13	129,274	10,498,083	[2] 1,673,616	1,557,663	920,381	971,978	213,759	585,685	2,684	4,495	24	1,457
Virginia............	41	134,106	20,490,378	3,658,824	3,608,404	1,546,223	1,397,041	1,264,213	2,211,363	6,981	11,416	55	5,130
Washington..........	3	5,298	758,544	328,074	311,265	35,263	70,661	42,980	240,604	298	560	......	185
West Virginia........	182	569,028	71,125,226	21,142,396	23,599,171	18,160,306	16,466,779	3,809,028	7,132,392	33,203	76,338	503	15,966
All other states [5].....	17	88,005	17,764,915	3,863,517	4,394,180	1,575,851	2,065,601	636,651	2,328,122	4,304	9,462	4	1,831

[1] The total includes $18,229,388 which can not be distributed among the individual states. The states to which the item relates are Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Montana, Oklahoma, Pennsylvania, Washington, West Virginia, and Wyoming. See footnote to Capital, Table 62.

[2] The total includes $433,801 cost of coal purchased for coking at mines, made up of $128,176 in Alabama, $261,475 in Colorado, $27,804 in Pennsylvania, and $16,346 in Tennessee.

[3] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

[4] There were 30,107,187 tons of coal, valued at $23,015,677, made into coke at mines.

[5] Includes Georgia, Montana, New Mexico, and Utah.

In round numbers the total quantity of bituminous coal produced in 1909 by all mines covered by the census was 378,975,000 tons (see Table 2), of which 376,865,510 tons were produced by the mines covered by the table given above (mines with complete reports). Of this quantity, 326,792,907 tons were produced for shipment or use as fuel, and 50,072,603 tons for conversion into coke at the mines, from which

---

[1] No statistics of mines operated by penal institutions, nor of mines furnishing incomplete reports are included in any table of Part III. The product of these mines is included in Tables 2, 4, 5, and 7, Part I.

32,450,482 tons of coke were made. The total value of the coal shipped or used as fuel, of the coke made at the mines, and of sundry by-products, was $427,962,464, and the total expenses reported were $395,907,026. Mines with coke manufacture reported 23.9 per cent of the total expenses and 26.2 per cent of the total value of products. Among the states with coke made at the mines Pennsylvania, West Virginia, and Alabama lead, with 22,499,706 tons of coke, valued at $43,937,062; 3,809,028 tons, valued at $7,132,392; and 2,883,774 tons, valued at $7,670,711, respectively. By far the most important coking region is the Connellsville district of Pennsylvania, which produced 20,207,354 tons, valued at $39,141,363.

In the United States as a whole the total expenses reported for mines without coke manufacture amounted in 1909 to $301,451,896, and the total value of products to $315,894,935, showing a difference of only $14,443,039, or about 5 cents per ton of coal produced. In Arkansas, Iowa, Kentucky, Oklahoma, Oregon, Tennessee, Virginia, and West Virginia the expenses reported exceeded the value of products.

For mines with coke manufacture the total reported expenses amounted to $94,455,130, and the value of products to $112,067,529, showing a difference of $17,612,399. In Kentucky, Tennessee, Virginia, and Washington the expenses reported by mines of this class exceeded the value of products reported.

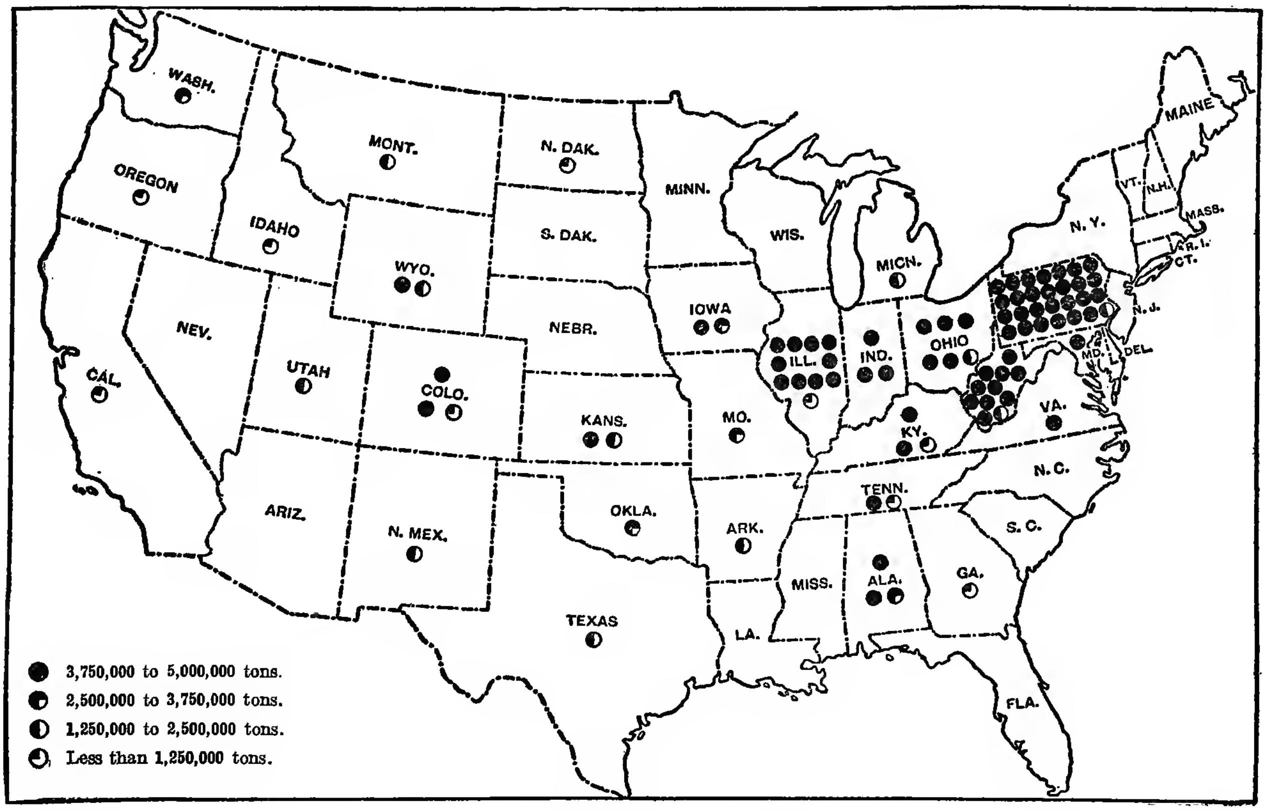
These data can not be taken as showing accurately the amount of profit or loss in the coal mining industry of the several states, but they do seem to indicate clearly that in many states the industry obtains only a very low rate of profit, if any. The remarks made on page 181 of this report as to the significance of the reported expenses, and particularly with reference to the matter of depreciation and of development work, should be carefully considered in connection with these statistics. While charges for permanent improvements not properly assignable to the operations of the current year have been included in the returns of the mine operators, it is uncertain whether the expenses of this character are sufficient in general to offset depreciation, for which, as such, no charge has been included in the expenses reported.

Among other reasons why the statistics in this table do not furnish conclusive evidence as to profits in the coal industry is the fact that a large proportion of the coal and coke is produced by mines affiliated with railway companies and other industrial concerns, and the value of coal or coke reported by them in many cases is fixed at an arbitrary figure which may be higher or lower than the current market prices.

It should also be noted that many mine operators make a considerable profit by renting houses and selling merchandise to their employees. The Bureau of the Census corresponded with many operators whose returns showed an excess of expenses over the value of products, and not a few of them stated that, while there was a loss in their coal mining business proper, this was more than counterbalanced by profits from selling merchandise and renting houses.

Relative production, by states: 1909.—The relative importance of the different states as producers of bituminous coal is indicated by the map below.

RELATIVE PRODUCTION OF BITUMINOUS COAL, BY STATES: 1909.



Coal mining exclusive of coke manufacture at the mines, by states.—In order to present data comparable with previous census reports the following table has been adjusted to cover coal mining only, by deducting from the figures given in the preceding table the estimated capital, expenses, number of salaried employees and wage earners, and the reported value of products, assignable to the manufacture of coke at the mines. Most of these estimates of numbers and amounts to be deducted on account of coke manufacture were made by the operators themselves, and the remainder were made by the Bureau of the Census.

STATISTICS FOR BITUMINOUS COAL MINES, EXCLUDING (PARTLY BY ESTIMATE) ITEMS RELATING TO COKE MANUFACTURE, BY STATES: 1909.

Table 33 STATE	Number of operators.	Capital.	EXPENSES.						Number of salaried employees.	Number of wage earners.	COAL PRODUCED, INCLUDING COAL COKED AT MINES.	
			Total.	Salaries.	Wages.	Supplies.	Royalties.	Miscellaneous expenses.			Value, including minor products.[1]	Tons (2,000 pounds).
United States	[2] 3,503	[3] $960,289,465	$378,159,282	[4] $20,417,392	$282,378,886	$45,345,932	$12,035,900	[4] $17,981,172	[5] 17,793	542,911	$401,577,477	376,885,510
Alabama	112	43,337,899	15,361,842	1,118,008	10,035,850	2,165,618	223,933	1,818,433	1,153	20,914	16,185,524	13,676,561
Arkansas	44	[3] 2,256,942	3,630,526	[4] 166,067	2,758,127	362,212	163,896	[4] 180,224	[5] 178	5,462	3,508,590	2,373,619
Colorado	86	25,491,031	13,159,671	[4] 662,201	9,776,702	1,749,382	430,136	[4] 541,250	[5] 498	14,447	14,104,268	10,642,868
Illinois	470	[3] 75,257,667	61,697,504	[4] 2,083,668	41,991,246	4,944,371	744,860	[4] 1,933,359	[5] 1,788	74,445	53,030,545	50,570,503
Indiana	223	[3] 35,937,961	14,906,831	[4] 604,111	12,273,544	1,198,974	240,494	[4] 589,708	[5] 550	22,357	15,018,123	14,723,231
Iowa	258	[3] 7,212,033	12,816,076	[4] 468,169	10,383,672	1,330,436	322,673	[4] 311,126	[5] 411	17,623	12,682,106	7,725,679
Kansas	118	[3] 6,262,203	9,778,297	[4] 286,523	8,106,670	609,521	266,545	[4] 509,038	[5] 300	12,791	9,836,614	6,895,660
Kentucky	240	24,508,533	10,127,987	[4] 787,205	7,122,056	1,189,022	325,239	[4] 704,465	[5] 855	19,583	9,940,485	10,561,276
Maryland	40	22,871,136	3,941,359	[4] 222,116	2,713,294	408,227	95,757	[4] 501,965	[5] 243	5,798	4,483,137	4,001,272
Michigan	15	6,865,156	2,985,802	125,140	2,267,272	326,517	61,555	206,318	106	3,572	3,176,102	1,772,315
Missouri	173	[3] 5,650,407	5,715,727	[4] 209,230	4,695,972	397,068	160,182	[4] 253,275	[5] 221	9,526	5,881,034	3,596,691
North Dakota	52	1,023,278	523,410	60,069	357,221	75,187	10,647	20,286	46	857	563,212	364,536
Ohio	441	64,131,141	27,153,497	[4] 1,367,036	20,922,039	2,681,281	892,398	[4] 1,290,743	[5] 1,220	44,405	27,353,663	27,518,764
Oklahoma	56	[3] 5,672,886	6,535,441	[4] 302,330	4,803,392	912,614	269,651	[4] 247,454	[5] 275	8,814	6,185,078	3,113,149
Oregon	8	642,410	238,246	11,714	152,845	62,590	438	10,659	11	251	225,026	83,704
Pennsylvania	689	[3] 358,698,722	117,443,350	[4] 5,427,150	86,191,515	15,855,616	3,950,876	[4] 6,018,193	[5] 4,716	168,513	129,545,547	137,304,760
Connellsville dist	76	78,517,182	24,966,514	1,203,489	17,683,509	4,043,656	469,879	1,565,981	1,046	32,715	30,770,903	38,729,778
Tennessee	85	19,471,452	6,691,482	647,534	4,751,419	665,884	404,429	322,216	535	10,832	6,548,615	5,972,930
Texas	29	5,894,898	2,812,079	[4] 177,103	2,126,043	334,867	36,247	[4] 137,819	[5] 174	4,234	3,136,004	1,824,742
Virginia	42	36,189,055	4,392,440	278,099	2,689,685	685,830	251,824	487,002	243	8,480	4,336,185	4,949,341
Washington	32	[3] 13,663,880	6,474,630	[4] 239,502	4,991,561	861,700	103,330	[4] 278,537	[5] 181	6,094	9,139,707	3,601,213
West Virginia	307	[3] 136,244,496	43,024,716	[4] 2,742,374	29,420,055	5,563,192	2,870,850	[4] 2,428,245	[5] 2,451	64,780	44,344,067	51,495,666
Wyoming	35	[3] 7,609,229	8,146,526	[4] 411,569	5,808,248	1,435,465	104,908	[4] 386,336	[5] 243	7,839	9,721,134	6,294,596
All other states [6]	84	[3] 37,167,662	10,601,843	597,118	8,040,458	1,531,358	105,032	327,877	[5] 392	11,294	12,634,811	7,802,434

[1] Value of minor products for the United States was $244,082.

[2] Exclusive of 136 operators duplicated in the numbers given for the various states.

[3] The total includes $18,229,388 which can not be distributed among the individual states; the states to which the item relates are Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Montana, Oklahoma, Pennsylvania, Washington, West Virginia, and Wyoming.

[4] The United States total for salaries includes $1,523,356, paid to employees of general offices, which, for the reasons given on page 182 under "Administrative expenses of general offices," have been included in the statistics of the separate states, not under the heading of "Salaries," but under "Miscellaneous expenses;" the states affected by this arrangement are Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Ohio, Oklahoma, Pennsylvania, Texas, Washington, West Virginia, and Wyoming.

[5] The total includes 1,003 salaried employees who could not be distributed by states for the reasons given on page 182 under "Administrative expenses of general offices;" the states affected are Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Montana, Ohio, Oklahoma, Pennsylvania, Texas, Washington, West Virginia, and Wyoming.

[6] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

In considering the relation between the total reported expenses, as shown in this table, and the value of products, the comments made in connection with the preceding table should be borne in mind. Moreover, the fact should be noted that in states where some of the mines made coke the amount of expenses shown as attributable to mine operation proper involves an element of estimate, while the total value assigned to the coal produced by such mines is in some cases arbitrary and scarcely in conformity with market prices.

Statistics of different kinds of bituminous coal: 1909.—The following table summarizes the principal statistics for bituminous coal mines classified according to the kind of coal produced. Data relating to coke manufacture at the mines have been excluded in the manner already described, so that the figures shown for bituminous proper involve a certain amount of estimate.

[Data relating to coke manufacture at mines excluded, partly by estimate.]

Table 34	Bituminous proper.[1]	Subbituminous and lignite.	Semianthracite.	Cannel.
Number of mines	5,769	183	49	12
Acres of coal land controlled	6,431,661	83,505	45,467	12,553
Owned	4,476,148	52,876	10,472	9,916
Held under lease	1,955,613	30,629	34,995	2,637
Total expenses	$365,881,773	$9,458,880	$2,581,598	$237,031
Average per ton	$1.00	$1.27	$1.44	$1.21
Salaries	$18,161,403	$574,150	$132,125	$26,358
Wages	$273,376,688	$6,945,855	$1,885,975	$170,368
Supplies	$43,747,567	$1,272,802	$306,945	$18,618
Royalties	$11,669,891	$237,321	$118,011	$10,677
Miscellaneous	$18,926,224	$428,752	$138,642	$11,010
Tons of coal produced (2,000 lbs.)	$367,417,737	7,459,426	1,793,011	195,336
Value of coal at mines	387,047,709	$11,198,868	$2,831,959	$254,859
Average per ton	$1.05	$1.50	$1.58	$1.30
Number of wage earners	528,468	10,478	3,569	396

[1] Includes bituminous, semibituminous, splint, and block coal.

The table does not show precisely the tonnage of the different kinds of coal, owing to the fact that a few companies producing chiefly bituminous coal proper, with a small output of other kinds, returned one combined report for all their operations. Under such conditions it was necessary to include the entire production under the heading of bituminous coal proper.

The table shows the marked predominance of the bituminous proper, under which heading are also included semibituminous, block, and splint coal. This type, with the exception of a little semianthracite and cannel coal, includes the entire production of the Eastern states. Most of the subbituminous and lignite coal is produced in Colorado, Montana, New Mexico, North Dakota, Texas, Utah, Washington, and Wyoming. More than 24 per cent of the combined output of these states in 1909 was of this class, but nearly all of their remaining production was bituminous proper.

The output of semianthracite is restricted by limited deposits. Nearly the entire production in 1909 came from Arkansas, such coal constituting more than one-half the total output of that state. Small quantities were also produced in Colorado, Oklahoma, Utah, and Virginia. Cannel coal occurs only in occasional small deposits. Kentucky, Ohio, Pennsylvania, and West Virginia were the chief producing states.

In considering the statistics in this table as to value of coal and expenses the comments in connection with the two preceding tables should be borne in mind. Furthermore, the variations in average value per ton shown by the table do not reflect similar differences in the quality of these coals, nor do the variations in average expenses conform to corresponding differences in physical conditions of mining. The average values per ton in 1909 were as follows: Semianthracite, $1.58; subbituminous and lignite, $1.50; cannel, $1.30; and bituminous proper, $1.05. Semianthracite and cannel are superior domestic fuels and under similar conditions command better prices than bituminous proper, but subbituminous and lignite are inferior to bituminous proper, and their higher average value is due primarily to the fact that these coals are produced in Western states where higher prices are realized for coal generally than in the eastern fields of great bituminous production. In the Western states producing both kinds of coal the average value per ton for bituminous proper was about $0.17 more than for subbituminous and lignite.

The average reported expenses per ton are as follows: Semianthracite, $1.44; subbituminous and lignite, $1.27; cannel, $1.21; and bituminous proper, $1. As compared with bituminous proper, the higher averages for semianthracite and cannel may be due to natural conditions of mining; that is, the working of thinner measures, justified by the higher prices which can be realized for these coals; but the higher average expense shown for subbituminous and lignite is due not to any such conditions as these, but to the uniformly higher cost of production in the West as compared with the East. In the Western states concerned the average expense for bituminous proper was $0.17 per ton higher than for subbituminous and lignite.

PROGRESS OF THE INDUSTRY.

Comparative statistics, by states: 1909 and 1889.— The following table gives comparative statistics of capital, total expenses, wages, supplies, and contract work, and of the tonnage and value of coal produced in 1909 and 1889. The figures in this table have been adjusted (as explained in connection with Table 6) to give comparable statistics for these two years. The data for the manufacture of coke at the mines have been excluded, partly by estimate, in the manner already described. The remarks as to expenses and value of coal made in connection with Tables 32 and 33 should be borne in mind.

The table shows marked progress in the industry in the period covered. For the United States as a whole, the output increased 294.1 per cent and its value 325.4 per cent. At the same time, the total expenses increased 343.2 per cent, the wage payments 330.6 per cent, and the cost of supplies 467.2 per cent.

Among the states showing an increase in output exceeding 500 per cent, namely, Arkansas, Michigan, North Dakota, Texas, and West Virginia, the latter is the only one which is an important coal producer. In the other states named coal mining was in an incipient stage 20 years ago. The greatest absolute increase in output is found in Pennsylvania, 101,100,000 tons (in round numbers); in West Virginia, 45,300,000 tons; in Illinois, 38,500,000 tons; and in Ohio, 17,500,000 tons.

COMPARATIVE STATISTICS FOR BITUMINOUS COAL MINES, BY STATES: 1909 AND 1889.

[Data relating to coke manufacture at mines excluded, partly by estimate.]

Table 35

STATE.	Census.	Capital.	EXPENSES.				COAL PRODUCED (INCLUDING COAL COKED AT MINES).		PER CENT OF INCREASE.						
									Capital.	Expenses.			Coal produced.	
			Total.	Wages.	Supplies.	Contract work.[1]	Tons (2,000 pounds).	Value at mines.		Total.	Wages.	Supplies.	Tons.	Value at mines.
United States	1909	[2] $960,289,465	$378,159,282	$282,378,886	$45,345,932	$2,134,569	376,865,510	$401,333,385	431.4	343.2	330.6	467.2	294.1	325.4
	1889	180,722,319	85,324,193	65,572,242	7,994,210	822,051	95,629,026	94,346,809						
Alabama	1909	43,337,899	15,361,842	10,035,850	2,165,618	751,384	13,676,561	16,174,278	245.7	312.2	227.6	728.1	282.8	308.3
	1889	12,535,194	3,726,939	3,063,059	261,512	36,624	3,572,983	3,961,491						
Arkansas	1909	[2] 2,256,942	3,630,526	2,758,127	362,212	28,511	2,373,619	3,508,490	(3)	1,076.0	1,052.2	825.0	749.0	786.3
	1889	1,289,751	308,711	239,385	39,158	....	279,584	395,836						
Colorado	1909	25,491,031	13,159,671	9,776,702	1,749,382	9,139	10,642,868	14,104,268	102.1	256.1	282.8	256.9	318.3	266.9
	1889	12,611,849	3,695,298	2,553,850	490,162	91,689	2,544,144	3,843,992						
Illinois	1909	[2] 75,257,667	51,697,504	41,991,246	4,944,371	51,480	50,570,503	52,999,918	(3)	398.7	417.7	411.3	317.8	350.9
	1889	17,630,351	10,366,069	8,111,253	966,927	26,662	12,104,272	11,755,203						
Indiana	1909	[2] 35,937,961	14,906,831	12,273,544	1,198,974	10,674	14,723,231	14,984,616	(3)	477.4	500.0	397.3	417.5	418.9
	1889	3,435,703	2,581,669	2,045,641	241,094	5,807	2,845,057	2,887,852						
Iowa	1909	[2] 7,212,033	12,816,078	10,383,672	1,330,436	38,268	7,725,679	12,679,225	(3)	170.8	180.5	272.6	88.6	133.7
	1889	6,279,179	4,732,950	3,701,331	357,033	65,194	4,095,358	5,426,509						
Kansas [4]	1909	[2] 6,262,203	9,778,297	8,106,670	609,521	49,793	6,895,660	9,835,567	(3)	258.1	273.7	131.9	210.3	197.9
	1889	3,488,539	2,730,782	2,169,137	262,820	6,330	2,222,443	3,301,788						
Kentucky	1909	24,508,533	10,127,987	7,122,056	1,189,022	86,660	10,661,278	9,939,078	272.4	369.6	349.5	401.0	340.1	318.6
	1889	6,581,380	2,156,548	1,584,400	237,321	45,099	2,399,755	2,374,339						
Maryland	1909	22,871,136	3,941,359	2,713,294	408,227	1,653	4,001,272	4,445,041	26.9	91.2	62.6	100.9	36.1	76.6
	1889	18,025,367	2,061,058	1,868,847	203,155	5,763	2,939,715	2,517,474						
Michigan	1909	6,865,156	2,985,802	2,267,272	325,517	2,203	1,772,315	3,175,102	13,727.1	2,525.7	2,562.4	3,483.0	2,528.3	2,660.7
	1889	49,650	113,714	85,158	9,085	....	67,431	115,011						
Missouri	1909	[2] 5,650,407	5,715,727	4,695,972	397,068	23,903	3,596,691	5,879,972	(3)	100.8	98.7	119.1	40.6	69.0
	1889	3,992,293	2,846,137	2,363,300	181,218	18,779	2,557,823	3,479,057						
North Dakota	1909	1,023,278	523,410	357,221	75,187	1,325	364,536	563,212	1,436.9	2,307.6	2,336.0	2,492.7	1,161.1	1,259.4
	1889	66,580	21,740	14,664	2,900	....	28,907	41,431						
Ohio	1909	64,131,141	27,153,497	20,922,039	2,681,281	52,854	27,518,764	27,274,403	357.5	229.8	222.8	372.0	175.8	191.5
	1889	14,018,236	8,232,183	6,482,215	568,020	58,767	9,978,787	9,355,400						
Oklahoma	1909	[2] 5,672,886	6,535,441	4,803,392	912,614	22,266	3,113,149	6,184,420	(3)	457.2	434.0	1,608.9	313.5	367.2
	1889	1,492,009	1,172,821	899,592	53,404	20,000	752,832	1,323,807						
Pennsylvania	1909	[2] 358,698,722	117,443,350	86,191,515	15,855,616	769,234	137,304,760	129,512,680	(3)	352.1	337.8	562.5	279.6	363.3
	1889	53,322,330	25,977,106	19,686,240	2,393,386	282,222	36,174,089	27,953,315						
Tennessee	1909	19,471,452	6,691,482	4,751,419	665,884	8,036	5,972,930	6,548,515	346.3	216.6	218.9	145.4	210.2	180.1
	1889	4,362,711	2,113,292	1,490,034	271,390	13,324	1,925,689	2,338,309						
Texas	1909	5,894,898	2,812,079	2,126,043	334,867	21,214	1,824,742	3,134,720	1,818.1	767.5	775.8	516.3	1,323.2	820.3
	1889	307,335	324,157	242,762	54,333	....	128,216	340,620						
Virginia	1909	36,189,055	4,392,440	2,689,685	685,830	114,453	4,949,341	4,336,185	3,328.6	543.7	356.5	1,366.9	471.7	439.0
	1889	1,055,516	682,408	589,236	46,754	932	865,786	804,475						
Washington	1909	[2] 13,663,880	6,474,630	4,991,661	861,700	10,162	3,601,213	9,139,707	(3)	187.2	204.7	200.0	249.4	281.9
	1889	3,186,441	2,254,486	1,637,960	287,211	9,296	1,030,578	2,393,238						
West Virginia	1909	[2] 136,244,498	43,024,716	29,420,055	5,563,192	62,279	51,495,666	44,343,894	(3)	788.6	719.0	1,102.6	726.3	771.8
	1889	10,508,050	4,841,796	3,592,292	462,591	47,099	6,231,880	5,086,584						
Wyoming	1909	[2] 7,609,229	8,146,526	5,808,248	1,435,465	10,644	6,294,596	9,721,134	(3)	346.6	284.4	538.5	353.2	455.9
	1889	2,239,252	1,823,956	1,511,117	224,804	7,881	1,388,947	1,748,617						
All other states [5]	1909	[2] 37,810,072	10,840,089	8,193,303	1,593,948	12,436	7,886,138	12,848,970	790.8	323.4	345.1	319.5	426.9	342.7
	1889	4,244,603	2,560,373	1,840,769	379,942	80,683	1,496,750	2,902,461						

---

[1] A small amount of contract work reported from the general offices of a few companies with mines in more than one state could not be distributed as such to the various states and has been omitted from the total given for this item in 1909. However, since the amount so omitted was less than 3 per cent of the total shown, this omission does not materially affect the value of the figures for comparative purposes.

[2] The total for 1909 includes $18,229,388 which can not be distributed among the individual states; the item relates to Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Montana, Oklahoma, Pennsylvania, Washington, West Virginia, and Wyoming. The increase in the combined capital for these states was 530.6 per cent.

[3] See Note 2.

[4] Includes Nebraska in 1889.

[5] Includes California, Georgia, Idaho, Montana, New Mexico, Oregon, and Utah in 1909; California, Georgia, Montana, New Mexico, North Carolina, Oregon, and Utah in 1889.

Table 36, derived from the preceding table, shows average expenses and average values per ton, by states, for 1909 and 1889.

In several states the average value per ton decreased, notably in Texas, where the average fell from $2.66 per ton in 1889 to $1.72 in 1909, but during the same period the average wage cost decreased from $1.89 to $1.17 per ton and the cost of supplies from $0.42 to $0.18 per ton. In Colorado, the value decreased from $1.51 per ton in 1889 to $1.33 in 1909, the wage cost decreased from $1 to $0.92 and the cost of supplies from $0.19 to $0.16 per ton. The decrease in average wage payments per ton and the accompanying decrease in average cost and value per ton in these Western states are probably due in part to the greater scale of production now prevailing, and in part to the relatively greater supply of labor now available for coal mining.

Table 36

STATE.	AVERAGE EXPENSES PER TON.						AVERAGE VALUE PER TON OF COAL.	
	Total.		Wages.		Supplies.			
	1909	1889	1909	1889	1909	1889	1909	1889
United States	**$1.00**	**$0.89**	**$0.75**	**$0.69**	**$0.12**	**$0.08**	**$1.08**	**$0.89**
Alabama	1.12	1.04	0.73	0.86	0.16	0.07	1.18	1.11
Arkansas	1.53	1.10	1.16	0.86	0.15	0.14	1.48	1.42
Colorado	1.24	1.45	0.92	1.00	0.16	0.19	1.33	1.51
Illinois	1.02	0.86	0.83	0.67	0.10	0.08	1.05	0.97
Indiana	1.01	0.91	0.83	0.72	0.08	0.08	1.02	1.02
Iowa	1.66	1.16	1.34	0.90	0.17	0.09	1.64	1.33
Kansas[1]	1.42	1.23	1.18	0.98	0.09	0.12	1.43	1.49
Kentucky	0.96	0.90	0.67	0.66	0.11	0.10	0.94	0.99
Maryland	0.99	0.70	0.68	0.57	0.10	0.07	1.11	0.86
Michigan	1.68	1.69	1.28	1.26	0.18	0.13	1.79	1.71
Missouri	1.59	1.11	1.31	0.92	0.11	0.07	1.63	1.36
North Dakota	$1.44	$0.75	$0.98	$0.51	$0.21	$0.10	$1.55	$1.43
Ohio	0.99	0.83	0.76	0.65	0.10	0.06	0.99	0.94
Oklahoma	2.10	1.56	1.64	1.19	0.29	0.07	1.99	1.76
Pennsylvania	0.86	0.72	0.63	0.54	0.12	0.07	0.94	0.77
Tennessee	1.12	1.10	0.80	0.77	0.11	0.14	1.10	1.21
Texas	1.54	2.53	1.17	1.89	0.18	0.42	1.72	2.66
Virginia	0.89	0.79	0.54	0.68	0.14	0.05	0.88	0.93
Washington	1.80	2.19	1.39	1.59	0.24	0.28	2.54	2.32
West Virginia	0.84	0.78	0.57	0.58	0.11	0.07	0.86	0.82
Wyoming	1.29	1.31	0.92	1.09	0.23	0.16	1.54	1.26
All other states[2]	1.37	1.71	1.04	1.23	0.20	0.25	1.63	1.94

[1] Includes Nebraska in 1889.

[2] Includes California, Georgia, Idaho, Montana, New Mexico, Oregon, and Utah in 1909; California, Georgia, Montana, New Mexico, North Carolina, Oregon, and Utah in 1889.

STATISTICS OF LAND HELD BY OPERATORS.

Extent of holdings.—While a few of the 3,503 operators of the mines covered by the general tables failed to report their land holdings, 3,456 of these operators reported 6,573,186 acres of coal land and 1,144,429 acres of other land, making a total for the entire United States of 7,717,615 acres controlled. The average holding of coal land per operator was about 1,900 acres, but excluding small local mines from consideration, the average for commercial producers was about 2,700 acres. The great variations in the extent of the holdings of single operators are shown by Tables 14 and 50. The following table gives, by states, the acreage of coal land owned and held under lease by operators, respectively, with percentages:

COAL LAND CONTROLLED BY OPERATORS OF BITUMINOUS COAL MINES: 1909.

Table 37

STATE.	ACRES OF COAL LAND CONNECTED WITH—									PER CENT OF COAL LAND CONNECTED WITH—					
	All mines.			Mines without coke manufacture.			Mines with coke manufacture.			All mines.		Mines without coke manufacture.		Mines with coke manufacture.	
	Total.	Owned.	Held under lease.	Total.	Owned.	Held under lease.	Total.	Owned.	Held under lease.	Owned.	Held under lease.	Owned.	Held under lease.	Owned.	Held under lease
United States	**6,573,186**	**4,549,412**	**2,023,774**	**4,883,967**	**3,225,778**	**1,658,189**	**1,689,219**	**1,323,634**	**365,585**	**69.2**	**30.8**	**66.0**	**34.0**	**78.4**	**21.6**
Alabama	599,259	525,355	73,904	231,765	160,261	71,504	367,494	365,094	2,400	87.7	12.3	69.1	30.9	99.3	0.7
Arkansas	54,359	23,885	30,474	54,359	23,885	30,474	......	......	......	43.9	56.1	43.9	56.1	......	......
Colorado	92,942	65,101	27,841	65,047	41,226	23,821	27,895	23,875	4,020	70.0	30.0	63.4	36.6	85.6	14.4
Illinois	552,396	395,965	156,431	552,396	395,965	156,431	......	......	......	71.7	28.3	71.7	28.3	......	......
Indiana	140,244	103,910	36,334	140,244	103,910	36,334	......	......	......	74.1	25.9	74.1	25.9	......	......
Iowa	70,192	20,152	50,040	70,192	20,152	50,040	......	......	......	28.7	71.3	28.7	71.3	......	......
Kansas	80,459	53,340	27,119	80,459	53,340	27,119	......	......	......	66.3	33.7	66.3	33.7	......	......
Kentucky	364,669	247,006	117,663	332,084	214,421	117,663	32,585	32,585	......	67.7	32.3	64.6	35.4	100.0	......
Maryland	68,220	63,596	4,624	68,220	63,596	4,624	......	......	......	93.2	6.8	93.2	6.8	......	......
Michigan	23,135	3,696	19,439	23,135	3,696	19,439	......	......	......	16.0	84.0	16.0	84.0	......	......
Missouri	116,108	70,805	45,303	116,108	70,805	45,303	......	......	......	61.0	39.0	61.0	39.0	......	......
North Dakota	10,356	7,971	2,385	10,356	7,971	2,385	......	......	......	77.0	23.0	77.0	23.0	......	......
Ohio	406,336	260,423	145,913	406,336	260,423	145,913	......	......	......	64.1	35.9	64.1	35.9	......	......
Oklahoma	75,744	910	74,834	75,744	910	74,834	......	......	......	1.2	98.8	1.2	98.8	......	......
Oregon	3,122	1,452	1,670	3,122	1,452	1,670	......	......	......	46.5	53.5	46.5	53.5	......	......
Pennsylvania	1,673,537	1,321,981	351,556	1,338,003	1,050,246	287,757	335,534	271,735	63,799	79.0	21.0	78.5	21.5	81.0	19.0
Connellsville district[1]	116,520	98,228	18,292	......	......	......	116,520	98,228	18,292	84.3	15.7	......	......	84.3	15.7
Tennessee	458,924	353,954	104,970	329,650	232,680	96,970	129,274	121,274	8,000	77.1	22.9	70.6	29.4	93.8	6.2
Texas	125,774	104,513	21,261	125,774	104,513	21,261	......	......	......	83.1	16.9	83.1	16.9	......	......
Virginia	169,296	85,217	84,079	35,190	11,353	23,837	134,106	73,864	60,242	50.3	49.7	32.3	67.7	55.1	44.9
Washington	88,611	67,635	20,976	83,313	66,295	17,018	5,298	1,340	3,958	76.3	23.7	79.6	20.4	25.3	74.7
West Virginia	1,134,485	583,263	551,222	565,457	215,401	350,056	569,028	367,862	201,166	51.4	48.6	38.1	61.9	64.6	35.4
Wyoming	64,783	50,024	14,759	64,783	50,024	14,759	......	......	......	77.2	22.8	77.2	22.8	......	......
All other states[2]	200,235	139,258	60,977	112,230	73,253	38,977	88,005	66,005	22,000	69.5	30.5	65.3	34.7	75.0	25.0

[1] Excludes the acreage of a few mines without coke manufacture in order to avoid disclosing individual operations.

[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

In the United States as a whole, 69.2 per cent of the coal land reported in 1909 was owned by the operators, while 30.8 per cent was held under lease. For mines without coke manufacture, 66 per cent was owned by operators, as compared with 78.4 per cent for mines with coke manufacture. This difference is due chiefly to the fact that the latter group includes many large companies with ample capital to permit the purchase of land. (See remarks following Table 49.)

The marked differences among the states with respect to the proportion of land owned and of land leased by mine operators can be attributed only to varying local conditions.

Production according to tenure of land, by states: 1909.—The following table gives, by states, the number of mines reported operated on land owned, on land held under lease, and on land partly owned and partly held under lease, together with the total output for each class of mines:

Table 38

STATE.	NUMBER OF MINES OPERATED ON LAND—			TOTAL TONS (2,000 POUNDS) OF COAL PRODUCED BY MINES OPERATED ON COAL LAND—		
	Owned.	Held under lease.	Partly owned and partly held under lease.	Owned.	Held under lease.	Partly owned and partly held under lease.
United States	**2,220**	**2,410**	**1,383**	**[1] 165,161,940**	**[2] 82,800,403**	**[3] 128,903,167**
Alabama	109	63	31	10,360,417	1,639,539	1,676,605
Arkansas	19	35	15	1,178,105	550,642	644,872
Colorado	48	54	53	1,999,949	1,660,106	6,982,813
Illinois	237	256	138	26,638,767	5,940,057	17,991,679
Indiana	147	115	60	7,220,506	2,506,029	4,996,696
Iowa	57	178	76	1,408,230	2,365,695	3,951,754
Kansas	56	121	25	3,185,115	1,868,893	1,841,652
Kentucky	144	121	45	5,597,607	3,056,051	1,907,618
Maryland	42	17	11	2,910,850	341,265	749,157
Michigan	3	2	23	9,987	(4)	[5] 1,762,328
Missouri	75	113	32	1,179,523	1,065,589	1,351,579
Montana	42	12	11	1,287,913	282,190	973,280
New Mexico	18	3	7	1,652,254	32,690	1,089,968
North Dakota	44	9	......	330,305	34,231	....
Ohio	260	225	155	12,473,327	4,022,418	11,023,019
Oklahoma	6	94	4	60,394	2,906,888	155,867
Oregon	4	3	2	29,067	(5)	[7] 54,637
Pennsylvania	587	471	451	64,782,860	21,400,517	51,121,383
Tennessee	38	75	29	2,002,475	3,043,900	926,555
Texas	28	11	8	1,282,486	383,663	158,593
Utah	21	1	......	[1] 2,259,789	(8)	....
Virginia	10	54	21	147,896	2,761,667	2,039,778
Washington	25	10	19	2,470,080	138,244	992,889
West Virginia	157	352	152	11,008,781	26,111,412	14,375,473
Wyoming	35	15	15	3,470,907	688,717	2,134,972
All other states [9]	8	......	......	224,350	....	....

[1] Includes tonnage of 1 mine operated on coal land held under lease, to avoid disclosing individual operations.

[2] Excludes 112,553 tons produced by 6 mines operated on coal land held under lease, to avoid disclosing output of individual operators.

[3] Includes tonnage of 5 mines operated on coal land held under lease.

[4] See Note 5.

[5] Includes tonnage of 2 mines operated on coal land held under lease.

[6] See Note 7.

[7] Includes tonnage of 3 mines operated on coal land held under lease.

[8] See Note 1.

[9] Includes California, Georgia, and Idaho.

Of the total production covered by the table, namely, 376,865,510 tons, 165,161,940 tons, or 43.8 per cent, was that of mines on land wholly owned by the operators; 82,800,403 tons, or 22 per cent, that of mines on land wholly leased; and 128,903,167 tons, or 34.2 per cent, that of mines on lands partly owned and partly leased by the operators. Although mines of the latter class did not report what part of the output came from owned and what part from leased land, it is probable that the greater portion was taken from owned land. This is shown by the amount of royalties reported by these operators as paid on coal taken from leased tracts, which indicates that the coal mined from such lands was somewhat less than half the total production of these mines. (See Tables 33 and 55.) Consequently, of the total coal output of the United States in 1909, it may be said that between 60 and 65 per cent was mined from lands owned by the operators, while between 35 and 40 per cent was produced from leased holdings.

The table indicates that mines operated on land owned were usually larger than those operated on land held under lease by operators. In the United States, as a whole, the average output per mine for these two classes of mines was, respectively, 74,000 and 34,000 tons, while in Illinois these averages were 112,000 and 23,000 tons, in Ohio 48,000 and 18,000 tons, and in Pennsylvania 110,000 and 45,000 tons, respectively. This difference in size, however, is due not to the form of tenure, but to the fact that concerns able to purchase large holdings of coal lands outright usually have the capital also to open large mines.

Comparative statistics of holdings, by states: 1909 and 1889.—Table 39 shows, by states, the number of acres of land owned and the number held under lease by operators, for 1889 and 1909.

Inasmuch as the returns for 1889 did not distinguish between coal land and other land held by operators, it has been necessary, in order to present comparable data for 1909, to include not only coal land, but all land controlled by operators. However, more than 85 per cent of the acreage reported in 1909 was coal land, and much of the remainder is underlaid with coal measures which may eventually prove workable.

Table 39

STATE.	COAL AND OTHER LAND CONTROLLED.						
	Total acres.			Acres owned.		Acres held under lease.	
	1909	1889	Per cent of increase.	1909	1889	1909	1889
United States	**7,717,815**	**1,526,933**	**405.4**	**5,835,243**	**1,141,011**	**2,082,372**	**385,922**
Alabama	776,244	222,749	248.5	701,790	216,129	74,454	6,620
Arkansas	54,686	17,064	220.5	24,137	15,969	30,549	1,095
Colorado	113,636	73,789	54.0	84,915	53,529	28,721	20,260
Illinois	585,366	191,740	205.3	424,739	161,468	160,627	30,272
Indiana	155,576	24,808	527.1	117,619	15,785	37,957	9,023
Iowa	77,796	38,682	101.1	26,771	24,239	51,025	14,443
Kansas [1]	83,869	40,016	109.6	56,205	36,077	27,664	3,939
Kentucky	399,846	128,100	212.1	280,053	106,622	119,793	21,478
Maryland	92,814	50,520	83.7	88,129	48,100	4,685	2,420
Michigan	25,661	622	4,025.6	6,222	142	19,439	480
Missouri	119,822	35,917	233.6	74,519	24,276	45,303	11,641
Montana	54,335	9,510	471.3	44,098	9,110	10,237	400
New Mexico	294,318	11,280	2,509.2	240,124	10,480	54,194	800
North Dakota	14,695	520	2,726.0	12,300	520	2,395	......
Ohio	432,204	104,898	312.0	283,439	66,697	148,765	38,201
Oklahoma	82,504	14,766	458.7	910	....	81,594	14,766
Pennsylvania	1,965,568	230,836	751.5	1,604,753	132,811	360,815	98,025
Tennessee	661,607	133,912	394.0	548,247	78,289	113,260	55,623
Texas	130,063	4,780	2,621.0	108,132	1,000	21,931	3,780
Utah	27,541	6,910	366.0	27,341	5,910	200	......
Virginia	170,479	17,690	863.7	86,282	13,900	84,197	3,790
Washington	98,167	23,198	323.2	76,271	20,322	21,896	2,876
West Virginia	1,176,860	107,521	994.5	611,023	61,531	565,837	45,990
Wyoming	70,908	13,360	430.7	55,744	13,360	15,164	......
All other states [2]	53,150	24,746	114.8	51,480	24,745	1,670	......

[1] Includes Nebraska in 1889.

[2] Includes California, Georgia, Idaho, and Oregon in 1909; California, Georgia, Oregon, and North Carolina in 1889.

The table shows a remarkable increase in the total acreage of lands controlled by mine operators between 1889 and 1909. For the entire United States this increase was more than 400 per cent, and for many individual states it was much greater. This increase is due chiefly to the great development of the industry in these 20 years, but may in part indicate an increased practice of securing reserve lands for the future. While, for the United States as a whole, the total acreage held under lease has increased but little more rapidly than the total acreage owned by operators, in a good many important states, notably Alabama, Illinois, Kentucky, and West Virginia, the area leased by operators increased far more than the acreage owned. In a few states, for example, Indiana, Ohio, Pennsylvania, and Tennessee, the opposite was the case.

MINES CLASSIFIED ACCORDING TO THE RELATION OF TOTAL EXPENSES TO VALUE OF PRODUCTS.

According to the relation of expenses to the value of products the coal mining enterprises reporting at the census of 1909 were classified as explained in the text following Table 40. The table gives, by states, for 1909 the number and output of mines in "Class A," "Class B," and "Class C."

[See text below for explanation of classification.]

Table 40	NUMBER OF MINES.			TONS OF COAL PRODUCED BY MINES (2,000 POUNDS).						TONS OF COKE MADE AT MINES (2,000 POUNDS).					
STATE.	Class A.	Class B.	Class C.	Class A.	Class B.	Class C.	Per cent produced by mines.			Class A.	Class B.	Class C.	Per cent produced by mines.		
							Class A.	Class B.	Class C.				Class A.	Class B.	Class C.
All mines:															
United States	**4,088**	**983**	**942**	**[1] 282,866,545**	**[2] 54,037,376**	**39,961,589**	**[2] 75.1**	**[2] 14.3**	**10.6**	**28,075,777**	**2,303,892**	**2,070,813**	**86.5**	**7.1**	**6.4**
MINES WITHOUT COKE MANUFACTURE.															
United States	**3,571**	**898**	**895**	**[1] 201,685,134**	**[3] 44,935,390**	**34,031,516**	**[2] 71.9**	**[2] 16.0**	**12.1**	...	...	...	...	...	...
Alabama	109	28	30	5,057,083	829,316	629,523	77.6	12.7	9.7	...	...	...	...	...	...
Arkansas	32	19	18	1,075,722	889,034	408,863	45.3	37.5	17.2	...	...	...	...	...	...
Colorado	94	12	34	4,832,791	426,035	1,735,930	69.1	6.1	24.8	...	...	...	...	...	...
Illinois	408	140	83	32,382,469	12,194,725	5,993,309	64.0	24.1	11.9	...	...	...	...	...	...
Indiana	224	54	44	8,684,863	3,429,569	2,608,799	59.0	23.3	17.7	...	...	...	...	...	...
Iowa	236	30	45	4,558,946	960,501	2,206,232	59.0	12.4	28.6	...	...	...	...	...	...
Kansas	125	58	19	4,390,216	2,005,829	499,615	63.7	29.1	7.2	...	...	...	...	...	...
Kentucky	169	64	66	5,893,522	1,745,465	1,747,191	62.8	18.6	18.6	...	...	...	...	...	...
Maryland	62	2	6	[3] 3,874,534	(4)	126,738	[4] 06.8	(4)	3.2	...	...	...	...	...	...
Michigan	18	...	10	1,144,916	...	627,399	64.6	...	35.4	...	...	...	...	...	...
Missouri	168	25	27	1,775,001	855,662	966,028	49.4	23.8	26.9	...	...	...	...	...	...
North Dakota	39	1	13	[5] 289,251	(6)	75,285	[6] 79.3	(6)	20.7	...	...	...	...	...	...
Ohio	451	116	73	18,342,526	7,083,559	2,092,679	66.7	25.7	7.6	...	...	...	...	...	...
Oklahoma	42	33	29	1,454,089	1,002,020	657,040	46.7	32.2	21.1	...	...	...	...	...	...
Oregon	5	...	4	30,512	...	53,192	36.5	...	63.5	...	...	...	...	...	...
Pennsylvania	873	165	141	71,269,885	7,422,550	6,411,514	83.7	8.7	7.5	...	...	...	...	...	...
Tennessee	62	27	40	3,123,127	636,365	897,765	67.1	13.7	19.3	...	...	...	...	...	...
Texas	28	7	12	1,456,156	178,581	190,005	79.8	9.8	10.4	...	...	...	...	...	...
Virginia	19	12	13	990,602	134,039	365,494	66.5	9.0	24.5	...	...	...	...	...	...
Washington	29	...	22	3,054,624	...	441,618	87.4	...	12.6	...	...	...	...	...	...
West Virginia	260	100	119	17,863,418	4,927,035	4,376,478	65.8	18.1	16.1	...	...	...	...	...	...
Wyoming	51	4	10	5,896,150	215,105	183,341	93.7	3.4	2.9	...	...	...	...	...	...
All other states [7]	67	2	37	[3] 4,244,731	(4)	737,478	[4] 85.2	(4)	14.8	...	...	...	...	...	...
MINES WITH COKE MANUFACTURE.															
United States	**517**	**84**	**47**	**81,181,411**	**9,101,886**	**5,830,073**	**84.4**	**9.5**	**6.2**	**28,075,777**	**2,303,892**	**2,070,813**	**86.5**	**7.1**	**6.4**
Colorado	15	...	...	3,648,112	...	...	100.0	...	...	1,061,868	...	...	100.0	...	...
Pennsylvania	284	25	21	46,509,334	4,186,128	1,505,349	89.1	8.0	2.9	20,515,361	1,263,595	720,750	91.2	5.6	3.2
Connellsville district	220	5	13	37,389,151	348,927	991,700	96.5	0.9	2.6	19,388,382	226,274	592,698	96.0	1.1	2.9
West Virginia	151	21	10	20,935,504	2,020,853	1,372,378	86.1	8.3	5.6	3,133,341	417,607	258,080	82.3	11.0	6.8
All other states [8]	67	38	16	10,088,461	2,895,005	3,052,346	62.9	18.1	19.0	3,365,207	622,690	1,091,983	66.2	12.3	21.5

[1] Includes tonnage of 5 "Class B" mines.
[2] See Note 1.
[3] Includes tonnage of 2 "Class B" mines.
[4] See Note 3.
[5] Includes tonnage of 1 "Class B" mine.
[6] See Note 5.
[7] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.
[8] Includes Alabama, Georgia, Kentucky, Montana, New Mexico, Tennessee, Utah, Virginia, and Washington.

The foregoing classification was made as follows: First, whenever a report showed an excess of value of products over all reported expenditures, including expenses of operation and outlays for development work (if any), the enterprise was placed in "Class A." Second, whenever a report showed expenditures greater than the value of products, and no expenses were reported for development work, the enterprise was placed in "Class B." In all cases where there was doubt as to the accuracy of such a report the operator's attention was called to the fact that it showed an excess of expenses over value of products, a verification or correction was requested, and the enterprise covered by the report was then classified in accordance with the reply received. Third, those reports which showed an excess of expenditures over value of products. but stated that a part of the expenditures were for development work, were placed in "Class C," no attempt being made, on account of the uncertainty as to the significance of the expenditure for development work, to determine whether the strictly operating expenses exceeded the value of products obtained or not. In each case the expenses and value of products of the coke business, where conducted in connection with mining, were taken into account in making the classification.

In considering this classification the discussion on page 181 regarding the difference between the expenses of mining as reported and the true cost of mining as determined by scientific methods of accounting, together with the remarks in connection with Table 32 should be borne in mind. With a proper allowance for depreciation some mines reporting a value of product in excess of the expenses reported might have been operated at a loss. On the other hand, some mine operators who lost on their mining business recouped themselves by profits from operating stores, renting houses, and from other nonmining business not covered by the returns.

Of the 6,013 mines covered by Table 40 it appears that 4,088, producing about three-fourths of the total coal output, were in "Class A;" that is, their value of products exceeded their expenses as reported. Marked differences appear from state to state. In Maryland and Wyoming more than 90 per cent of the total coal output was produced by such mines, in Pennsylvania and Washington more than 85 per cent, and in Colorado, Texas, and West Virginia more than 75 per cent. On the other hand, in Arkansas, Missouri, Oklahoma, and Oregon less than half the tonnage produced was reported by mines at which the value of products exceeded the total reported expenses, but in Arkansas and Oklahoma there was some duplication of the expenses reported which may have materially affected this classification. (See remarks preceding Table 51.)

In general, a greater proportion of the mines operated in combination with coke manufacture are found in "Class A" than of the mines without coke ovens. Many of these coke-making mines operated under peculiarly favorable conditions. The majority were closely affiliated with large consumers of coke, and were thus enabled to operate more regularly and on a larger scale, while the output was doubtless often charged to the parent companies at values more or less independent of market prices.

METHODS OF MINE OPERATION.

Pick and machine mining.—In some mines practically the entire output of coal is machine mined, in others the entire output is pick mined, while in many the output is partly machine and partly pick mined. The following table gives the total quantity and percentage of coal produced by machine and by pick mining in different states, and Table 53 gives additional data relating to this subject.

OUTPUT OF BITUMINOUS COAL MINES CLASSIFIED ACCORDING TO METHOD OF MINING, BY STATES: 1909.

Table 41	TONS (2,000 POUNDS) OF COAL PRODUCED AT—									PER CENT OF COAL PRODUCED AT—					
STATE.	All mines.			Mines without coke manufacture.			Mines with coke manufacture.			All mines.		Mines without coke manufacture.		Mines with coke manufacture.	
	Total.	By machine.	By pick.	Total.	By machine.	By pick.	Total.	By machine.	By pick.	By machine.	By pick.	By machine.	By pick.	By machine.	By pick.
United States	**376,865,510**	**144,775,410**	**232,090,100**	**280,652,040**	**122,881,301**	**157,770,739**	**96,213,470**	**21,894,109**	**74,319,361**	**38.4**	**61.6**	**43.8**	**56.2**	**22.8**	**77.2**
Alabama	13,676,561	2,295,500	11,381,061	6,515,922	1,151,808	5,364,114	7,160,639	1,143,692	6,016,947	16.8	83.2	17.7	82.3	16.0	84.0
Arkansas	2,373,619	4,444	2,369,175	2,373,619	4,444	2,369,175	...	...	...	0.2	99.8	0.2	99.8	...	...
Colorado	10,642,868	2,046,645	8,596,223	6,994,756	2,046,645	4,948,111	3,648,112	...	3,648,112	19.2	80.8	29.3	70.7	...	100.0
Illinois	50,570,503	18,140,591	32,429,912	50.570,503	18,140,591	32,429,912	...	...	...	35.9	64.1	35.9	64.1	...	...
Indiana	14,723,231	7,450,091	7,273,140	14,723,231	7,450,091	7,273,140	...	...	...	50.6	49.4	50.6	49.4	...	...
Iowa	7,725,679	8,414	7,717,265	7,725,679	8,414	7,717,265	...	...	...	0.1	99.9	0.1	99.9	...	...
Kansas	6,895,660	54,976	6,840,684	6,895,660	54,976	6,840,684	...	...	...	0.8	99.2	0.8	99.2	...	...
Kentucky	10,561,276	6,494,960	4,066,316	9,386,178	5,512,263	3,873,915	1,175,098	982,697	192,401	61.5	38.5	58.7	41.3	83.6	16.4
Maryland	4,001,272	117,568	3,883,704	4,001,272	117,568	3,883,704	...	...	...	2.9	97.1	2.9	97.1	...	...
Michigan	1,772,315	628,211	1,144,104	1,772,315	628,211	1,144,104	...	...	...	35.4	64.6	35.4	64.6	...	...
Missouri	3,596,691	798,878	2,797,813	3,596,691	798,878	2,797,813	...	...	...	22.2	77.8	22.2	77.8	...	...
North Dakota	364,536	164,365	200,171	364,536	164,365	200,171	...	...	...	45.1	54.9	45.1	54.9	...	...
Ohio	27,518,764	22,112,063	5,406,701	27,518,764	22,112,063	5,406,701	...	...	...	80.4	19.6	80.4	19.6	...	...
Oklahoma	3,113,149	50,811	3,062,338	3,113,149	50,811	3,062,338	...	...	...	1.6	98.4	1.6	98.4	...	...
Oregon	83,704	22,000	61,704	83,704	22,000	61,704	...	...	...	26.3	73.7	26.3	73.7	...	...
Pennsylvania	137,304,760	57,574,954	79,729,806	85,103,949	46,873,329	38,230,620	52,200,811	10,701,625	41,499,186	41.9	58.1	55.1	44.9	20.5	79.5
Connellsville district[1]	38,729,778	4,065,186	34,664,592	...	...	...	38,729,778	4,065,186	34,664,592	10.5	89.5	...	...	10.5	89.5
Tennessee	5,972,930	1,024,398	4,948,532	4,657,257	944,599	3,712,658	1,315,673	79,799	1,235,874	17.2	82.8	20.3	79.7	6.1	93.9
Texas	1,824,742	17,230	1,807,512	1,824,742	17,230	1,807,512	...	...	...	0.9	99.1	0.9	99.1	...	...
Virginia	4,949,341	1,439,811	3,509,530	1,490,135	616,076	874,059	3,459,206	823,735	2,635,471	29.1	70.9	41.3	58.7	23.8	76.2
Washington	3,601,213	48,690	3,552,523	3,496,242	48,690	3,447,552	104,971	...	104,971	1.4	98.6	1.4	98.6	...	100.0
West Virginia	51,495,666	20,945,819	30,549,847	27,166,931	13,871,026	13,295,905	24,328,735	7,074,793	17,253,942	40.7	59.3	51.1	48.9	29.1	70.9
Wyoming	6,294,596	1,391,101	4,903,495	6,294,596	1,391,101	4,903,495	...	...	...	22.1	77.9	22.1	77.9	...	...
All other states[2]	7,802,434	1,943,890	5,858,544	4,982,209	856,122	4,126,087	2,820,225	1,087,768	1,732,457	24.9	75.1	17.2	82.8	38.6	61.4

[1] Exclusive of the tonnage of a few mines without coke manufacture in order to avoid disclosing individual operations.
[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

Although in some mines the condition of the roof and floor, and the structure of the coal measure itself may seriously affect, or even prevent the use of machines for undercutting and shearing coal, this is not the case in most mines now operating; and, speaking broadly, it may be said that the use of machines generally indicates more advanced and more efficient methods of mine operation.

While this table shows that 38.4 per cent of the total coal output of the United States in 1909 was machine mined, great differences appear from state to state. In Ohio 80.4 per cent, in Kentucky 61.5 per cent, and in Indiana 50.6 per cent of all coal was mined by machines. Although Pennsylvania shows the greatest absolute tonnage mined by machines, only 41.9 per cent of the state's total coal output was thus produced. In Arkansas, Iowa, Kansas, and Texas the proportion mined by machines was insignificant.

As a group the mines with coke ovens show only 22.8 per cent of their production machine mined, as compared with 43.8 per cent for the mines without coke manufacture. In the important Connellsville coke district of Pennsylvania only 10.5 per cent of the output of coal was machine mined, as compared with 55.1 per cent for the Pennsylvania mines without coke manufacture. This difference in the use of machines between mines with and those without coke manufacture is partly accounted for by the fact that mines which market a large part of their output of coal in the form of coke—including the less remunerative "slack"—are thereby often rendered less urgently in need of introducing machines to lower operating costs and to decrease the percentage of "slack" produced, than are those mines which must market their entire output of coal as such, including the "slack."

Kind of mine opening.—Coal is produced from four general types of mine openings: Vertical shafts, slopes, horizontal or upward sloping drifts, and open cuts or strippings. Some mines have openings of two or more kinds. To some extent mine operation is affected by the kind of opening. For example, many drift mines of commercial importance are operated without the use of mechanical power, but no shaft mine thus operated can produce any considerable tonnage. Scores of drifts are self-draining, but in slope and shaft mines pumps are used to keep the workings clear of water. The initial cost of opening drifts is less than that for shafts, since the drift starts at once in the coal, while the shaft must first be sunk some distance through rock or other material. Since drifts open coal measures which have been partially eroded, and which outcrop along hill or mountain sides, the quantity of coal which can be mined through such an opening is often limited, and this may affect the size of the mine, but the size of slope or shaft mines may be less limited in this manner. Open cuts or strippings are quarries rather than true mines, since the entire overburden is removed before the coal is taken out.

The following table gives for various states the total quantity and percentage of coal produced from different openings, and Table 54 gives additional information relating to this subject.

OUTPUT OF BITUMINOUS COAL MINES CLASSIFIED ACCORDING TO KIND OF OPENING, BY STATES: 1909.

Table 42

STATE.	TONS (2,000 POUNDS) OF COAL PRODUCED BY—						PER CENT FROM—				
	All mines.	Shaft mines.	Slope mines.	Drift mines.	Open cuts or strippings.	Mines with opening not specified or with two or more kinds.	Shaft mines.	Slope mines.	Drift mines.	Open cuts or strippings.	Mines with opening not specified or with two or more kinds.
United States	**376,865,510**	**[1] 132,128,764**	**62,359,748**	**156,855,382**	**[2] 291,578**	**[3] 24,630,058**	**35.1**	**16.7**	**41.6**	**0.1**	**6.5**
Arkansas	2,373,619	1,368,386	883,595	....	....	[4] 121,638	57.7	37.2	....	....	5.1
Colorado	10,642,868	2,451,078	5,064,356	2,647,616	....	479,818	23.0	47.6	24.9	....	4.6
Illinois	50,570,503	48,780,105	540,393	529,564	70,570	649,871	96.5	1.1	1.0	0.1	1.3
Indiana	14,723,231	13,732,135	307,604	95,638	20,825	567,029	93.3	2.1	0.6	0.1	3.9
Iowa	7,725,679	5,737,697	224,484	81,246	....	[4] 1,682,252	74.3	2.9	1.0	....	21.8
Kansas	6,895,660	6,670,924	51,631	....	93,342	79,763	96.7	0.7	....	1.4	1.2
Kentucky	10,561,276	2,470,286	2,035,391	6,189,910	....	[4] 865,689	23.4	19.3	49.1	....	8.2
Michigan	1,772,315	[5] 1,772,315	....	....	....	....	100.0	....	....	....	....
Missouri	3,596,691	2,890,940	232,213	219,657	58,256	195,625	80.4	6.5	6.1	1.6	5.4
Montana	2,543,383	197,757	1,134,171	1,073,766	....	137,689	7.8	44.6	42.2	....	5.4
New Mexico	2,774,912	....	1,818,382	901,566	....	[6] 54,964	....	65.5	32.5	....	2.0
Ohio	27,518,764	7,816,286	3,556,732	14,390,513	....	1,755,233	28.4	12.9	52.3	....	6.4
Oklahoma	3,113,149	1,294,103	1,412,634	20,443	27,320	358,649	41.6	45.4	0.7	0.9	11.5
Pennsylvania	137,304,760	31,237,388	27,595,960	70,117,374	....	8,354,038	22.8	20.1	51.1	....	6.1
Tennessee	5,972,930	....	522,528	5,169,325	....	[6] 281,077	....	8.7	86.5	....	4.7
Texas	1,824,742	1,408,924	276,823	....	....	138,995	77.2	15.2	....	....	7.6
Virginia	4,949,341	....	114,291	3,906,467	....	[7] 928,583	....	2.3	78.9	....	18.8
Washington	3,601,213	....	2,420,581	681,997	....	[4] 498,635	....	67.2	18.9	....	13.9
West Virginia	51,495,666	3,867,076	2,395,423	44,700,542	....	532,625	7.5	4.7	86.8	....	1.0
Wyoming	6,294,596	....	4,149,128	1,390,536	....	[6] 754,932	....	65.9	22.1	....	12.0
All other states[8]	20,610,212	433,364	8,223,428	5,739,202	21,265	6,192,953	2.1	39.9	27.8	0.1	30.0

---

[1] Includes the product of 1 slope mine and excludes 460,268 tons, the product of 5 shaft mines, in order that individual operations might not be disclosed.
[2] Excludes 17,834 tons, the product of 4 open cut mines, in order that individual operations might not be disclosed.
[3] Includes 460,286 tons, the product of 5 shaft mines, and 17,834 tons, the product of 4 open cut mines, in order that individual operations might not be disclosed.
[4] Includes the product of 1 open cut mine.
[5] Includes the product of 1 slope mine.
[6] Includes the product of 1 shaft mine.
[7] Includes the product of 2 shaft mines.
[8] Includes Alabama, California, Georgia, Idaho, Maryland, North Dakota, Oregon, and Utah.

In the United States as a whole drift mines have the greatest output, 41.6 per cent of the total, in 1909, shaft mines following with 35.1 per cent, and slope mines with 16.7 per cent. Drift mines are especially numerous in the Appalachian fields. Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia, each reported more than 50 per cent of its output produced from such openings, and these states together reported nearly 90 per cent of all the coal mined from drifts in the United States. The predominance of drifts in these states is explained by the fact that in the Appalachian region immense deposits of coal have been cut through in all directions by streams, while the measures are but little displaced from the horizontal, and consequently there are thousands of miles of outcrops on which drift mines may be opened.

Shaft mines characterize the states of the Eastern and Northern Interior and of the Western and Southwestern Interior regions. Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, and Texas, each reported more than 70 per cent of its output produced from such mines. In these states the coal measures generally lie at some distance below the surface, outcrops are few, and shafts are necessary for extensive development. The greater part of the small tonnage of open cuts or strippings was also produced in these states. These open cuts or strippings are made along the outcrop of the coal, or where it lies near the surface, and the overburden is removed until its thickness limits the stripping. Although but a small aggregate tonnage was thus obtained in 1909, there is considerable coal available in many fields for such operations.

Slope mines are of two general types: Those which open on the outcrop of a pitching vein and follow the incline of the deposit, and those which first go through more or less rock and earth to reach a deposit which may be approximately horizontal. Slope mines of the first type are found chiefly in the Rocky Mountain and Pacific Coast states, where many coal measures with the inclosing strata have been much disturbed by folding and displacement. Slope mines of the second type are scattered through many states, slopes often taking the place of shafts where the distance to the underlying bed is not great.

The quantity of coal entered in the sixth column includes not only the output of mines the reports for which failed to specify the kind of opening, but also the production of such individual mines as have two or more openings of different kinds, and that of operators with several mines of different types covered by one combined report. The states included among "All other states" were those in which the proportion not specified was too large to justify separate presentation of the figures for the several classes.

DISPOSITION OF COAL.

A small part of the coal produced is used at the mines for steam and heat, a part is made into coke at the mines, a small part is sold locally, and the remainder is either used in the vicinity of the mines by the producing concerns in other departments of their business (manufacturing, transportation, etc.) or is shipped from the mines for such use or for sale. The following table gives, by states, the percentages disposed of in the four different ways above outlined. The absolute quantities appear in Table 62.

In the United States in 1909, 81.7 per cent of the total bituminous coal output was shipped from the mines for sale or was used as fuel in other departments by producers, 13.3 per cent was coked at the mines, and the remaining 5 per cent was either sold locally or used at the mines for steam and heat. For mines at which no coke was made 94.4 per cent was shipped away for sale or was used as fuel in other departments by the producers. For the mines at which coke was manufactured 44.8 per cent of the output was disposed of similarly and 52 per cent was coked. Considerable variations appear among the states with reference to the disposition of coal by mines of this class. In the Connellsville district of Pennsylvania 77.7 per cent of the entire output of mines having coke ovens was coked at the mines and much of the remainder was coked elsewhere. On the other hand, in Kentucky, where coke manufacturing was merely incidental, in 1909, but 7.3 per cent of the output of mines with ovens was coked.

The table shows that of the total output of bituminous coal 2.5 per cent was burned at the mines for steam and heat. With the single exception of Oregon the variation from state to state in the percentage thus used was not large. The unusual proportion thus consumed in Oregon is accounted for by the fact that a considerable tonnage of refuse from washing coal for market was burned under the boilers.

BITUMINOUS COAL MINES—DISPOSITION OF OUTPUT, BY STATES: 1909.

Table 43

STATE.	PER CENT OF TOTAL TONS OF OUTPUT FROM— All mines. Loaded at mines for shipment or used in other departments by producers.	All mines. Sold locally.	All mines. Made into coke at mines.	All mines. Used at mines for steam and heat.	Mines without coke manufacture. Loaded at mines for shipment or used in other departments by producers.	Mines without coke manufacture. Sold locally.	Mines without coke manufacture. Used at mines for steam and heat.	Mines with coke manufacture. Loaded at mines for shipment or used in other departments by producers.	Mines with coke manufacture. Sold locally.	Mines with coke manufacture. Made into coke at mines.	Mines with coke manufacture. Used at mines for steam and heat.
United States	81.7	2.5	13.3	2.5	94.4	3.1	2.5	44.8	0.8	52.0	2.4
Alabama	60.2	1.0	34.8	3.9	94.3	1.8	3.9	29.2	0.3	66.5	3.9
Arkansas	95.6	0.6	....	3.8	95.6	0.6	3.8	....	....	....	....
Colorado	79.0	2.3	15.6	3.1	93.4	3.4	3.2	51.3	0.4	45.4	2.9
Illinois	92.2	5.0	....	2.9	92.2	5.0	2.9	....	....	....	....
Indiana	91.6	5.5	....	2.9	91.6	5.5	2.9	....	....	....	....
Iowa	88.5	8.8	....	2.7	88.5	8.8	2.7	....	....	....	....
Kansas	95.4	2.5	....	2.1	95.4	2.5	2.1	....	....	....	....
Kentucky	92.9	3.8	0.8	2.5	93.9	4.0	2.1	85.4	1.9	7.3	5.4
Maryland	97.9	0.9	....	1.2	97.9	0.9	1.2	....	....	....	....
Michigan	90.9	5.1	....	4.0	90.9	5.1	4.0	....	....	....	....
Missouri	90.0	8.2	....	1.8	90.0	8.2	1.8	....	....	....	....
North Dakota	66.6	30.0	....	3.4	66.6	30.0	3.4	....	....	....	....
Ohio	95.1	2.7	....	2.2	95.1	2.7	2.2	....	....	....	....
Oklahoma	92.5	1.4	....	6.1	92.5	1.4	6.1	....	....	....	....
Oregon	52.9	26.4	....	20.7	52.9	26.4	20.7	....	....	....	....
Pennsylvania	71.7	1.5	24.6	2.2	95.9	2.0	2.1	32.3	0.8	64.7	2.2
Connellsville district[1]	19.3	0.8	77.7	2.2	....	....	....	19.3	0.8	77.7	2.2
Tennessee	90.4	1.3	6.6	1.7	97.3	1.2	1.5	66.0	1.6	30.0	2.4
Texas	97.0	0.3	....	2.6	97.0	0.3	2.6	....	....	....	....
Virginia	56.6	1.0	38.7	3.7	96.5	1.5	2.1	39.5	0.8	55.3	4.4
Washington	92.5	1.6	1.9	4.0	94.4	1.6	4.0	29.5	0.6	66.4	3.5
West Virginia	85.1	1.1	12.0	1.8	96.9	1.4	1.7	71.9	0.9	25.4	1.9
Wyoming	94.4	1.1	....	4.5	94.4	1.1	4.5	....	....	....	....
All other states[2]	78.9	2.0	15.9	3.2	93.1	2.8	4.1	53.7	0.5	44.1	1.6

[1] Exclusive of a few mines without coke manufacture, omitted to avoid disclosing individual operations.
[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

STATISTICS OF COMMERCIAL AND OF LOCAL OPERATORS.

The census of bituminous coal mines covered all operations with an output of 1,000 tons or more in 1909. Particular interest attaches to the statistics of producers for the general trade, who may be called commercial producers, as distinguished from local operators (shipping no coal, but catering entirely to local demand). Separate statistics for these two classes of operators for the United States as a whole are summarized in the following table. The commercial mines of course include many which do not produce primarily for sale in the open market, but whose product is largely used by railroads or industrial concerns controlling the mines.

While the table shows a total of 1,084 operators selling their entire output locally, it must be remembered that hundreds of such operators were not covered by the census because their output fell below 1,000 tons. These 1,084 operators constituted nearly one-third of the total number reporting and operated nearly one-fifth of all the mines covered, but their output, aggregating 3,678,000 tons, was only a fraction of the total for the industry.

Table 44

	All operators.	LOCAL OPERATORS. Amount or number.	LOCAL OPERATORS. Per cent of total.	COMMERCIAL OPERATORS. Amount or number.	COMMERCIAL OPERATORS. Per cent of total.
Number of operators	3,503	[1] 1,084	30.9	2,419	69.1
Number of mines	6,013	1,131	18.8	4.882	81.2
Acres of land controlled	7,717,615	151,211	2.0	7,566,404	98.0
Total expenses	$395,907,026	$4,632,372	1.2	$391,274,654	98.8
Exclusive of coking expenses (partly estimated)	$378,159,282	$4,632,372	1.2	$373,526,910	98.8
Average per ton of coal	$1.00	$1.26	......	$1.00	......
Products, total value	$427,962,464	$5,490,440	1.3	$422,472,024	98.7
Coal, exclusive of coal coked at mines—					
Tons (2,000 pounds)	326,792,907	3,678,320	1.1	323,114,587	98.9
Value at mines	$360,052,340	$5,490,440	1.5	$354,561,900	98.5
Coke made at mines—					
Tons (2,000 pounds)	32,450,482	....	......	32,450,482	100.0
Value	$67,483,162	....	......	$67,483,162	100.0
Coal, including coal coked at mines—					
Tons (2,000 pounds)	376,865,510	3,678,320	1.0	373,187,190	99.0
Value	$401,333,395	$5,490,440	1.4	$395,842,955	98.6
Average per ton	$1.06	$1.49	......	$1.06	......
Number of proprietors and firm members	3,739	1,601	42.8	2,138	57.2
Number of wage earners	569,789	9,072	1.6	560,717	98.4

[1] These operators were distributed among the several states, as follows: Alabama, 9; Arkansas, 1; California, 1; Colorado, 22; Idaho, 2; Illinois, 186; Indiana, 121; Iowa, 140; Kansas, 12; Kentucky, 49; Maryland, 11; Michigan, 3; Missouri, 58; Montana, 12; New Mexico, 2; North Dakota, 32; Ohio, 179; Oklahoma, 3; Oregon, 4; Pennsylvania, 191; Utah, 5; Virginia, 6; Washington, 2; West Virginia, 23; and Wyoming, 11.

The average expense of mine operation of these local producers was reported as $1.26 per ton, as compared with $1 per ton for the commercial mines (excluding coking expenses); but the true cost of production of these small operators was even higher than the figure given, since many proprietors and partners performed services, sometimes manual labor, at their mines for which no charges were included in the expenses reported. These partners and proprietors looked to the profits of the business for their compensation, but in arriving at the average expenses of production, allowance should be made for these services. The relatively high average value per ton of coal reported for these mines, $1.49, as compared with $1.06 for the commercial operations, is explained by the fact that much of their output was retailed.

STATISTICS OF OPERATORS CLASSIFIED ACCORDING TO THEIR INDUSTRIAL AFFILIATION.

The following table gives statistics for operators in 1909 affiliated with railroads, with iron and steel companies, and with other industrial companies, and for operators without such affiliations, respectively. In order to render these figures fairly comparable, the operators selling only in local markets—small irregular producers—have been eliminated from the statistics of the unaffiliated group, leaving in this class only commercial operators. The classification throughout has been based on official information.[1] When this information was not conclusive the operator was classified as unaffiliated. Accordingly the actual number of affiliated operators is probably somewhat larger than shown by the table.

The relatively great importance of the operators affiliated with railroads and industrial concerns is shown by this table. Such affiliated operators in 1909 held nearly one-half the total acreage of lands reported by all commercial operators and produced more than two-fifths of the total coal output and more than three-fourths of the coke made at mines. The average output per operator for the unaffiliated operators was less than 100,000 tons, as compared with more than 1,800,000 tons for operators affiliated with railroad companies, nearly 1,300,000 tons for those affiliated with iron and steel companies, and more than 300,000 tons for those affiliated with other industrial companies. On the average, the individual mines of operators affiliated with railroad and industrial companies were also much larger than those of unaffiliated commercial operators.

Of the total tonnage of coke made at the mines in 1909, more than half was reported by operators affiliated with iron and steel companies. This showing is to be expected, since such concerns are the chief consumers of coke, and their coal mines are operated mainly to furnish this fuel. Nearly 60 per cent of the total coal output of this group was coked at the mines and a considerable part of the remaining tonnage was coked by the parent companies after shipment to blast furnaces. As a class, the unaffiliated operators did not coke any considerable proportion of their coal at the mines; in the aggregate they used less than 6 per cent of their total output in making coke. Of course many of these operators were mining noncoking coals.

Table 45	Total.	OPERATORS AFFILIATED WITH—			Unaffiliated commercial operators.
		Railroad companies.	Iron and steel companies.	Other industrial companies.	
Number of operators	2,419	33	36	131	2,219
Number of mines	4,882	430	252	455	3,745
Acres of coal and other land controlled[1]	7,685,797	1,513,384	1,401,618	715,551	3,955,244
Per cent of total	100.0	20.0	18.5	9.4	52.1
Total expenses (including expenses of coke manufacture at mines)[2]	$391,274,654	$65,626,550	$47,203,171	$47,226,716	$231,218,217
Number of wage earners	560,717	93,692	62,806	63,490	340,729
Coal produced for use or sale as fuel:					
Tons (2,000 pounds)	323,114,587	57,162,392	19,291,173	38,968,588	207,692,434
Value at mines[3]	$354,805,982	$68,695,501	$20,317,073	$42,035,493	$223,757,915
Coke made at mines:					
Tons (2,000 pounds)	32,450,482	2,392,428	17,842,486	4,120,871	8,094,697
Value at mines[4]	$67,666,042	$5,256,579	$38,690,029	$8,595,538	$15,123,896
Coal produced, including coal coked at mines:					
Tons (2,000 pounds)	373,187,190	60,816,091	46,587,216	45,376,419	220,408,464
Per cent of total	100.0	16.3	12.5	12.2	59.1
Value at mines[5]	$396,087,037	$71,781,217	$42,633,998	$47,715,279	$233,956,543
Average tons produced per operator	154,273	1,842,882	1,294,089	346,385	99,328
Average tons produced per mine	76,441	141,430	184,870	99,728	58,854

[1] Includes duplication of 19,393 acres sublet by operators to each other.

[2] Includes $405,997, cost of coal purchased for coking at mines by operators affiliated with iron and steel companies, and $27,804 by operators affiliated with other industrial companies.

[3] Includes a small value of other products.

[4] Includes value of by-products.

[5] Includes a small value of other products but not that of coke.

SCALE OF PRODUCTION.

The scale of production prevailing in the bituminous coal mining industry is considered in two aspects: First, that of the individual mine, and, second, that of the operator.

Size of mines: 1909.—The size of bituminous mines varies widely. The annual output ranges from a few hundred tons in the case of some local "banks" to a half million tons and more for the largest mines. The census did not cover mines with less than 1,000 tons of output in 1909. Mines producing 500,000 tons or more were relatively few, those exceeding 250,000 tons were much more numerous, while hundreds mined more than 100,000 tons; but by far the great majority were of smaller size.

Table 46 shows the average output per mine in 1909, by states.

---

[1] For detailed explanation of the method of making this classification see remarks in connection with Table 11.

Table 46

STATE.	AVERAGE OUTPUT OF COAL PER MINE (TONS OF 2,000 POUNDS).		
	All mines.	Mines without coke manufacture.	Mines with coke manufacture.
United States	**62,675**	**52,312**	**148,478**
Alabama	67,372	39,017	198,907
Arkansas	34,400	34,400	....
Colorado	68,664	49,963	243,207
Illinois	80,143	80,143	....
Indiana	45,724	45,724	....
Iowa	24,841	24,841	....
Kansas	34,137	34,137	....
Kentucky	34,069	31,392	106,827
Maryland	67,161	67,161	....
Michigan	63,297	63,297	....
Missouri	16,349	16,349	....
North Dakota	6,878	6,878	....
Ohio	42,998	42,998	....
Oklahoma	29,934	29,934	....
Oregon	9,300	9,300	....
Pennsylvania	90,991	72,183	168,184
Connellsville district[1]	162,730	....	162,730
Tennessee	42,063	36,103	101,206
Texas	38,824	38,824	....
Virginia	58,228	33,867	84,371
Washington	66,689	68,554	34,990
West Virginia	77,906	56,716	133,674
Wyoming	96,840	96,840	....
All other states[2]	63,434	47,002	165,896

[1] Exclusive of a few mines without coke manufacture, omitted to avoid disclosing individual operations.

[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

From this table it appears that for the United States, as a whole, the average output of all bituminous mines covered by the census in 1909 was 62,675 tons, but if the small local mines are excluded, the average for commercial mines was about 76,000 tons. (See Table 44.) Wyoming showed the highest average output per mine, followed by Pennsylvania and Illinois, while the output per mine in North Dakota and Oregon was much lower than in any of the other states separately named.

As a group the mines with coke manufacture produced on the average nearly three times as much coal per mine as those without coke manufacture, while the coke-making mines in Colorado had a greater average output per mine than the mines of either class in any of the other states listed in the table.

Although the size of mines may be determined by many conditions, the character of the deposit worked, the capital available, the market for the product, and the presence or absence of affiliation with railroads or industrial concerns are highly important factors.

Classification of operators according to value of products: 1909.—Table 12 classifies the organizations operating bituminous mines according to the value of products reported. Tables 47, 48, 49, and 50 show how the size of these organizations is affected, first, by the the industrial affiliation of operators, and second, by the presence or absence of coke manufacture at the mines. "Commercial" operators, in the sense used in Table 47 and elsewhere, are those producing coal for general markets; "local" operators, those producing only for local consumption.

Table 47

VALUE OF ALL PRODUCTS PER OPERATOR.	ALL OPERATORS.		OPERATORS AFFILIATED WITH RAILROADS AND INDUSTRIAL CONCERNS.				UNAFFILIATED COMMERCIAL OPERATORS.				UNAFFILIATED LOCAL OPERATORS.			
	Number.	Value of all products.	Operators.		Value of all products.		Operators.		Value of all products.		Operators.		Value of all products.	
			Number.	Per cent.	Amount.	Per cent.	Number.	Per cent.	Amount.	Per cent.	Number.	Per cent.	Amount.	Per cent.
All classes	**3,503**	**$427,962,464**	**200**	**100.0**	**$183,590,213**	**100.0**	**2,219**	**100.0**	**$238,881,811**	**100.0**	**1,084**	**100.0**	**$5,490,440**	**100.0**
Less than $5,000	1,116	2,826,603	30	15.0	84,460	(1)	335	15.1	888,001	0.4	751	69.3	1,854,142	33.8
$5,000 to $10,000	481	3,408,410	15	7.5	117,838	0.1	247	11.1	1,827,276	0.8	219	20.2	1,463,296	26.7
$10,000 to $100,000	1,261	47,712,666	63	31.5	2,208,922	1.2	1,084	48.9	43,330,742	18.1	114	10.5	2,173,002	39.6
$100,000 to $1,000,000	577	151,141,253	50	25.0	15,550,531	8.5	527	23.7	135,590,722	56.8	......	......	....	......
$1,000,000 and over[2]	68	222,873,532	42	21.0	165,628,462	90.2	26	1.2	57,245,070	24.0	......	......	....	......

[1] Less than one-tenth of 1 per cent.

[2] Includes 10 operators each reporting products valued at $5,000,000 and over which can not be shown by groups on account of the disclosure of individual operations. The total value of their products was $108,025,423.

In connection with these statistics it should be borne in mind, as explained on page 181, that, when a parent company had several coal mining subsidiary companies, these subsidiaries have not been treated singly as separate operators, but have been considered together as one operator under the name of the parent company.

From Table 47 it is apparent that much greater operating organizations are found among companies affiliated with railroads and industrial concerns than among unaffiliated operators. In the entire industry 10 operators each reported products valued at more than $5,000,000, and of this number, 8 were allied with outside enterprises. Sixty-eight operators reported products valued at more than $1,000,000, and 42 of these were classed as having such affiliations. The average value of products per operator for the 200 producers with such connections was more than $900,000, as compared with only about $100,000 for the unaffiliated commercial operators. The coal mining companies affiliated with railroads reported an average value of products per company of more than $2,000,000, as compared with average values of about $1,600,000 and $400,000, respectively, for the coal mining subsidiaries of iron and steel companies, and those of other industrial enterprises. (See Table 45.)

Among the affiliated operators those reporting products valued at more than $1,000,000 each, constituted by far the chief producing group, and together reported 90 per cent of the total value shown for the affiliated producers. Among the unaffiliated commercial operators the chief producing group was composed of those whose products were valued at $100,000 to $1,000,000.

The table also shows the limitation usually imposed on the scale of operations by dependence on local markets. None of the unaffiliated operators selling exclusively in local markets reported products equaling $100,000 in value and only 114 out of a total of 1,084 such operators reported products exceeding $10,000 in value.

Table 48 shows, for 1909, the number of operators affiliated with railroads, iron and steel companies, and other industrial concerns, respectively, classified according to value of all products per operator.

Table 48 VALUE OF ALL PRODUCTS PER OPERATOR.	NUMBER OF OPERATORS AFFILIATED WITH—		
	Railroad companies.	Iron and steel companies.	Other industrial companies.
All classes	**33**	**36**	**131**
Less than $5,000	....	....	30
$5,000 to $10,000	....	....	15
$10,000 to $100,000	2	8	53
$100,000 to $1,000,000	10	19	21
$1,000,000 and over [1]	21	9	12

[1] Includes 8 operators reporting products valued at $5,000,000 and over.

Table 49 compares the size of the coal mining organizations which also manufactured coke at their mines with the size of those which did not make coke.

Table 49 VALUE OF ALL PRODUCTS PER OPERATOR.	NUMBER OF OPERATORS—		
	Total.	Without coke manufacture at mines.	With coke manufacture at mines.
Total	**3,503**	**3,322**	**181**
Less than $10,000	1,597	1,590	7
$10,000 to $100,000	1,261	1,212	49
$100,000 to $500,000	522	442	80
$500,000 to $1,000,000	55	40	15
$1,000,000 to $5,000,000	58	37	21
$5,000,000 and over	10	1	9

The proportion of large organizations is much higher among operators combining coal mining with coke manufacture than among other operators. The growth of extensive organizations among the former has been fostered not only by close affiliation with large consumers of coal and coke, but also by the fact that the areas of good coking coal are of limited extent, are largely controlled by big companies, and few tracts are available for small operators, while, on the other hand, hundreds of thousands of acres of steam and domestic coal are available for cheaply opened small mines, and by the further fact that the heavy initial cost of beginning coke manufacture necessitates a larger scale of production.

Classification of operators according to acreage of land controlled: 1909.—The following table gives the number of bituminous operators, with and without coke manufacture at their mines, classified according to the acreage of land (coal and other) controlled:

Table 50 NUMBER OF ACRES PER OPERATOR.	NUMBER OF OPERATORS—		
	Total.	Without coke manufacture at mines.	With coke manufacture at mines.
Total	**[1] 3,456**	**[1] 3,275**	**181**
Less than 100 acres	1,228	1,208	20
100 to 1,000 acres	1,430	1,386	44
1,000 to 10,000 acres	676	602	74
10,000 to 100,000 acres	111	77	34
100,000 acres and over	11	2	9

[1] Forty-seven operators failed to report acreage.

This table shows that holders of large areas of land are relatively much more numerous among operators making coke than among those without coke manufacture. On account of limited deposits many operators, particularly those affiliated with large coke consumers, have obtained extensive areas of coking coal for reserve supplies.

EXPENSES.

Average expenses per ton of coal, by states.—Statistics showing, by states, the average expenditures per ton of coal produced are presented in two tables. The first table (51) covers all mines furnishing complete reports. The data have been adjusted to relate exclusively to coal mining by omitting the expenses attributable to the manufacture of coke at the mines. (See Table 33.) The second table (52) covers only those mines without coke manufacture which reported a value of product in excess of expenses and were classified in Table 40 as class A mines.

In connection with these tables the remarks under "Expenses" on page 181, as to depreciation and expenditures for mine development included in the expenses reported, must be taken into account.

For certain states the total average expenses per ton and the averages for supplies given in the table may be slightly in error. This is due to the fact that under cost of supplies some operators included the cost of mining supplies afterward sold to employees with deductions therefor from wages, but the wages tabulated were the gross earnings before these deductions were made, and hence the total expenses for these operators were slightly exaggerated. By correspondence most of such reports were corrected. Although the remaining reports could not be corrected, the limit of possible error caused by them was ascertained through the deductions from wages. Thus it appears that the limit of error from this cause in the above averages for the United States is only about half a cent per ton. In Alabama this error may amount to slightly over $0.02 per ton; in Iowa, to $0.05 per ton; in Michigan, to $0.05 per ton; in North Dakota, to $0.04 per ton; in Oklahoma, to $0.08 per ton; and in Texas, to $0.04 per ton. In all other states any such error, if existing at all, is negligibly small. Furthermore, it must be distinctly understood that these figures mentioned represent not a certain error, but only the extreme limit of a possible error, while doubtless the actual error is much within this limit.

Table 51

STATE.	AVERAGE EXPENSE PER TON OF COAL PRODUCED.					
	Total.	Salaries.	Wages.	Supplies.	Royalties.	Miscellaneous expenses.
United States	$1.00	$0.05	$0.75	$0.12	$0.03	$0.05
Alabama	1.12	0.08	0.73	0.16	0.02	0.13
Arkansas	1.53	0.07	1.16	0.15	0.07	0.08
Colorado	1.24	0.06	0.92	0.16	0.04	0.05
Illinois	1.02	0.04	0.83	0.10	0.01	0.04
Indiana	1.01	0.04	0.83	0.08	0.02	0.04
Iowa	1.66	0.06	1.34	0.17	0.04	0.04
Kansas	1.42	0.04	1.18	0.09	0.04	0.07
Kentucky	0.96	0.07	0.67	0.11	0.03	0.07
Maryland	0.99	0.06	0.68	0.10	0.02	0.13
Michigan	1.68	0.07	1.28	0.18	0.03	0.12
Missouri	1.59	0.06	1.31	0.11	0.04	0.07
North Dakota	1.44	0.16	0.98	0.21	0.03	0.06
Ohio	0.99	0.05	0.76	0.10	0.03	0.05
Oklahoma	2.10	0.10	1.54	0.29	0.09	0.08
Oregon	2.85	0.14	1.83	0.75	0.01	0.13
Pennsylvania	0.86	0.04	0.63	0.12	0.03	0.04
Tennessee	1.12	0.09	0.80	0.11	0.07	0.05
Texas	1.54	0.10	1.17	0.18	0.02	0.08
Virginia	0.89	0.06	0.54	0.14	0.05	0.10
Washington	1.80	0.07	1.39	0.24	0.03	0.08
West Virginia	0.84	0.05	0.57	0.11	0.06	0.05
Wyoming	1.29	0.07	0.92	0.23	0.02	0.06
All other states[1]	1.36	0.08	1.03	0.20	0.01	0.04

[1] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

The above averages per ton vary widely in different states, but, owing to the differences in wage scales, the methods of mining, the scale of operations, and in other conditions of production, not only between different states but often within a state itself, the figures can be used only for very general comparisons. The average expense on account of royalties is not the average rate of royalty, for which see Table 55.

Expenses for selected mines, by states.—As explained in connection with Table 40, class A mines are those reporting a total value of products greater than the total expenses reported. The following table gives data relating to expenses at such mines. Mines with coke manufacture are not included.

The averages in Table 52 for the United States as a whole, and for Alabama, Colorado, Kentucky, Pennsylvania, Tennessee, Virginia, Washington, West Virginia, and "All other states" are not strictly comparable with those in the preceding table, since in that table the figures for the United States as a whole and for the states named are based on all mines, including those with coke manufacture, while the results given here are based entirely on mines without coke manufacture. The consequent incomparability of the figures is shown by the averages for Pennsylvania, which are $0.86 per ton for all mines, and $0.89 per ton for the class A mines covered by Table 52. This difference is due to the inclusion in the former table and the exclusion from the latter of the Connellsville coke district, a region of cheap, large scale, coal mining. However, when the averages in the two tables for comparable states, such as Illinois, Indiana, and Ohio, are considered, it appears that the uniformly lower average expenses for the class A mines are due chiefly to lower average wage payments.

The remarks in connection with the preceding table, concerning the possible errors and the general limitations of the data, also apply to this table.

TOTAL TONS OF COAL PRODUCED, TOTAL EXPENSES, AND AVERAGE EXPENSES PER TON FOR MINES OF CLASS A, BY STATES, EXCLUDING MINES WITH COKE MANUFACTURE: 1909.

Table 52

STATE.	Total tons of coal produced.	EXPENSES.						AVERAGE EXPENSE PER TON OF COAL PRODUCED.					
		Total.	Salaries.	Wages.	Supplies.	Royalties.	Miscellaneous expenses.	Total.	Salaries.	Wages.	Supplies.	Royalties.	Miscellaneous expenses.
United States	201,553,624	$200,611,178	$9,865,250	$153,437,847	$22,086,921	$6,463,877	$8,777,284	$1.00	$0.05	$0.76	$0.11	$0.03	$0.04
Alabama	5,057,083	5,555,962	484,624	3,900,885	767,134	138,041	265,278	1.10	0.10	0.77	0.15	0.03	0.05
Arkansas	1,075,722	1,463,091	62,258	1,131,897	118,616	82,730	67,590	1.36	0.06	1.05	0.11	0.08	0.06
Colorado	4,832,791	6,148,956	353,198	4,518,027	781,387	215,704	280,640	1.27	0.07	0.93	0.16	0.04	0.06
Illinois	32,382,469	32,042,935	1,320,705	26,158,848	3,057,049	307,505	1,198,828	0.99	0.04	0.81	0.09	0.01	0.04
Indiana	8,684,863	8,106,407	354,807	6,692,393	645,697	119,601	293,909	0.93	0.04	0.77	0.07	0.01	0.03
Iowa	4,558,946	7,305,172	323,221	5,872,565	684,511	234,807	190,068	1.60	0.07	1.29	0.15	0.05	0.04
Kansas	4,390,216	5,842,587	165,554	4,961,999	348,474	133,262	233,298	1.33	0.04	1.13	0.08	0.03	0.05
Kentucky	5,893,522	5,018,374	347,660	3,710,117	504,399	194,937	261,261	0.85	0.06	0.63	0.08	0.03	0.04
Maryland	3,771,555	3,710,260	187,350	2,547,985	382,839	95,607	496,479	0.98	0.05	0.68	0.10	0.03	0.13
Michigan	1,144,916	1,740,196	60,505	1,398,244	176,738	26,586	78,123	1.52	0.05	1.22	0.16	0.02	0.07
Missouri	1,775,001	2,744,253	106,590	2,288,248	177,678	79,352	92,385	1.55	0.06	1.29	0.10	0.04	0.05
North Dakota	286,251	355,235	40,712	253,637	45,899	3,932	11,055	1.24	0.14	0.89	0.16	0.01	0.04
Ohio	18,342,526	16,732,771	768,033	13,258,872	1,466,841	646,060	592,965	0.91	0.04	0.72	0.08	0.04	0.03
Oklahoma	1,454,089	2,692,416	125,010	1,981,892	361,259	125,873	98,382	1.85	0.09	1.36	0.25	0.09	0.07
Oregon	30,512	66,948	4,920	53,814	4,520	170	3,524	2.19	0.16	1.76	0.15	0.01	0.12
Pennsylvania	71,269,885	63,311,934	2,920,036	47,238,566	7,758,012	2,534,035	2,861,285	0.89	0.04	0.66	0.11	0.04	0.04
Tennessee	3,123,127	3,052,464	256,432	2,104,475	251,712	299,835	140,010	0.98	0.08	0.67	0.08	0.10	0.04
Texas	1,456,156	2,077,025	126,551	1,578,371	258,485	24,399	89,219	1.43	0.09	1.08	0.18	0.02	0.06
Virginia	990,602	829,126	59,109	597,574	67,323	41,845	63,275	0.84	0.06	0.60	0.07	0.04	0.06
Washington	3,054,624	4,909,702	149,192	3,925,855	577,339	47,887	209,429	1.61	0.05	1.29	0.19	0.02	0.07
West Virginia	17,863,418	14,038,496	997,503	9,792,286	1,567,913	910,758	770,036	0.79	0.06	0.55	0.09	0.05	0.04
Wyoming	5,896,150	7,477,725	372,535	5,326,656	1,338,533	103,450	336,551	1.27	0.06	0.90	0.23	0.02	0.06
All other states[1]	4,219,200	5,389,144	278,745	4,144,641	724,563	97,501	143,694	1.28	0.07	0.98	0.17	0.02	0.03

[1] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

Expenses and related data for mines classified according to method of mining, selected states.—The following table has been prepared to show broadly the differences in the cost of coal production resulting from different methods of mining. Mines with coke manufacture are excluded, because the expenses of the coke business can not be segregated here with sufficient precision to make comparisons with safety. Data are shown only for states in which the number of enterprises of each class was large enough to furnish significant information. No totals for the United States are given, because conditions differ so widely in different parts of the country with respect to factors other than the method of mining that no conclusions could safely be derived from such totals. For the same reason in comparing the several methods of mining each state or group of states should be considered by itself.

STATISTICS OF BITUMINOUS COAL MINES, CLASSIFIED ACCORDING TO METHOD OF MINING: 1909.

[Exclusive of mines with coke manufacture.]

Table 53

STATE AND METHOD OF MINING.	Number of mines.	EXPENSES.											
		Total.	Salaries.	Wages.	Fuel and rent of power.	Other supplies.	Royalties and miscellaneous.	Average per ton.					
								Total.	Salaries.	Wages.	Fuel and rent of power.	Other supplies.	Royalties and miscellaneous.
ILLINOIS:													
Machine mining	39	$5,681,627	$225,285	$4,735,214	$81,038	$426,453	$213,637	$0.84	$0.03	$0.70	$0.01	$0.06	$0.03
Pick mining with mechanical power	436	29,807,306	1,115,809	24,393,872	595,415	2,087,271	1,614,939	1.13	0.04	0.92	0.02	0.08	0.06
Pick mining without mechanical power [1]	67	364,466	11,865	293,268	1,651	33,615	24,067	1.11	0.04	0.89	0.01	0.10	0.07
Mixed pick and machine mining [2]	89	15,844,105	730,709	12,568,892	327,149	1,391,779	825,576	0.93	0.04	0.74	0.02	0.08	0.05
OHIO:													
Machine mining	138	10,339,534	486,009	8,046,387	130,386	953,969	722,783	0.93	0.04	0.73	0.01	0.09	0.07
Pick mining with mechanical power	98	1,917,219	128,717	1,490,656	22,793	176,048	99,005	1.22	0.08	0.95	0.01	0.11	0.08
Pick mining without mechanical power [1]	250	1,063,322	52,738	860,210	3,897	65,646	80,831	1.04	0.05	0.84	(3)	0.06	0.08
Mixed pick and machine mining [2]	154	13,833,422	699,572	10,524,786	231,390	1,097,152	1,280,522	1.00	0.05	0.76	0.02	0.08	0.09
PENNSYLVANIA:													
Machine mining	52	5,834,991	200,028	4,360,739	125,775	519,042	629,407	0.89	0.03	0.67	0.02	0.08	0.10
Pick mining with mechanical power	309	15,696,995	666,340	11,899,186	241,624	1,475,545	1,414,300	1.00	0.04	0.76	0.02	0.09	0.09
Pick mining without mechanical power [1]	420	3,509,090	170,479	2,721,572	3,179	239,658	374,202	0.90	0.04	0.70	(3)	0.06	0.10
Mixed pick and machine mining [2]	398	54,310,865	2,619,410	39,673,780	1,147,106	6,305,564	4,565,005	0.92	0.04	0.67	0.02	0.11	0.08
WEST VIRGINIA:													
Pick mining with mechanical power	100	4,811,112	325,664	3,180,438	69,275	710,472	525,263	1.04	0.07	0.69	0.02	0.15	0.11
Pick mining without mechanical power [1]	66	825,722	72,600	559,444	1,460	90,142	102,076	0.86	0.08	0.58	(3)	0.09	0.11
Mixed pick and machine mining [2]	313	18,690,529	1,312,358	12,743,699	308,422	2,020,883	2,305,167	0.87	0.06	0.59	0.01	0.09	0.11
WESTERN STATES:[4]													
Machine mining	23	1,622,634	83,335	1,211,727	27,899	192,561	107,112	1.27	0.07	0.95	0.02	0.15	0.08
Pick mining with mechanical power	116	10,177,305	494,573	7,527,431	329,346	1,146,882	679,073	1.39	0.07	1.03	0.05	0.16	0.09
Pick mining without mechanical power [1]	57	438,174	38,328	294,380	275	54,557	50,634	1.62	0.14	1.09	(3)	0.20	0.19
Mixed pick and machine mining [2]	67	9,373,525	484,385	6,700,931	256,092	1,281,371	650,746	1.36	0.07	0.97	0.04	0.19	0.09

Table 53—Continued.

STATE AND METHOD OF MINING.	COAL PRODUCED.					WAGE EARNERS.					Primary horsepower.	AVERAGE PER MINE.		
	Tons.	Per cent distribution.			Value at mines.	Maximum number.		Minimum number.				Tons produced.	Wage earners.	Primary horsepower.
		Loaded at mines for shipment or used in other departments by producers.	Sold locally.	Used at mines for steam and heat.		Month.	Number.	Month.	Number.	Per cent of maximum.				
ILLINOIS:														
Machine mining	6,785,177	96.6	1.1	2.3	$5,879,392	Nov	7,548	July	6,433	85.2	21,128	173,979	201	542
Pick mining with mechanical power	26,384,175	89.0	8.0	3.0	29,949,150	Dec	42,850	June	34,859	81.4	93,935	60,514	102	215
Pick mining without mechanical power [1]	329,450	54.8	43.3	1.9	434,448	Jan	1,583	July	273	17.2	....	4,917	7	......
Mixed pick and machine mining [2]	17,071,701	96.0	1.0	2.9	16,736,928	Dec	20,454	Aug	16,516	80.7	51,111	191,817	242	574
OHIO:														
Machine mining	11,088,693	96.8	1.1	2.1	10,464,186	Nov	16,335	Apr	13,493	82.6	45,251	80,353	122	328
Pick mining with mechanical power	1,567,156	87.4	9.8	2.8	1,912,640	Dec	2,954	May	2,060	69.7	5,843	15,991	35	60
Pick mining without mechanical power [1]	1,023,002	57.1	42.6	0.3	1,214,810	Dec	2,089	June	1,246	59.6	....	4,092	9	......
Mixed pick and machine mining [2]	13,839,913	97.4	0.3	2.3	13,682,767	Nov	22,546	June	19,543	86.7	46,328	89,870	143	301
PENNSYLVANIA:														
Machine mining	6,524,973	96.4	0.7	2.9	5,963,828	Dec	8,100	May	7,388	91.2	31,444	125,480	157	605
Pick mining with mechanical power	15,717,481	95.7	2.7	1.5	16,284,546	Dec	23,870	May	20,803	87.2	35,372	50,866	79	114
Pick mining without mechanical power [1]	3,892,521	82.0	17.9	0.1	3,939,700	Dec	6,501	Apr	4,842	74.5	....	9,268	16	......
Mixed pick and machine mining [2]	58,968,974	96.8	0.9	2.3	59,560,978	Dec	75,442	Jan	65,816	87.2	171,434	148,163	193	431
WEST VIRGINIA:														
Pick mining with mechanical power	4,613,525	96.7	1.7	1.5	4,249,234	Dec	6,877	May	5,706	83.0	14,518	46,135	69	145
Pick mining without mechanical power [1]	957,102	95.1	4.8	0.1	784,401	Dec	1,518	May	1,176	77.5	....	14,502	25	......
Mixed pick and machine mining [2]	21,596,304	97.0	1.2	1.8	18,296,613	Nov	27,940	Mar	24,710	88.4	64,720	68,998	89	207
WESTERN STATES:[4]														
Machine mining	1,280,891	95.2	1.8	3.0	2,077,007	Dec	1,801	Apr	1,147	63.7	7,675	55,691	80	334
Pick mining with mechanical power	7,301,932	94.2	1.8	4.0	11,643,777	Dec	10,212	July	7,875	77.1	35,477	62,948	89	306
Pick mining without mechanical power [1]	270,108	69.0	30.9	0.1	490,726	Dec	589	July	237	40.2	....	4,739	11	......
Mixed pick and machine mining [2]	6,882,594	93.7	2.2	4.1	10,544,825	Dec	9,494	July	7,698	81.1	28,087	102,725	141	419

---

[1] This group includes the following numbers of proprietors and partners performing manual labor at the mines, for whom no wages were reported: Illinois, 44; Ohio, 131; Pennsylvania, 162; West Virginia, 10; and Western states, 25.

[2] The following percentages of tonnage in this class were mined by machine: Illinois, 66.5; Ohio, 79.8; Pennsylvania, 68.4; West Virginia, 64.2; and Western states, 43.8.

[3] Less than 1 cent.

[4] Includes Colorado, Montana, and Wyoming.

As shown by the table pick mines operated without mechanical power are generally small, irregular operations, and in most states, as a matter of fact, they are chiefly dependent upon local trade. The average expenses per ton given for these mines are not strictly comparable with those of the other three classes covered by the table, since a relatively large number of proprietors and partners performed services in these small mines—administrative work or manual labor—without including any charge therefor in the expenses reported. (See Table 60.)

The table shows uniformly lower average expenses per ton for machine mines than for pick mines with mechanical power. The average difference per ton in favor of the machine mines in Illinois was $0.29; in Ohio, $0.29; in Pennsylvania, $0.11; and in Western states, $0.12. The greater part of this advantage is, naturally, due to a considerably lower average expense per ton for wages.

Inasmuch as the total output of the mines using only the machine method may be considered comparatively small in some of the states shown, the average expenses per ton for the "mixed" mines should also be compared with those for mines using the pick method exclusively. This "mixed" group contains a few exclusively machine and a few exclusively pick mines (included by operators in one combined report), but is composed chiefly of mines operated partly by machine and partly by pick mining. As shown by the footnote, the major part of the great output of this group in each of the four states separately named is machine mined, and in each of them the average total expenses and the average wage payments per ton were lower than for pick mines with mechanical power. This difference in total expenses per ton in Illinois was $0.20; in Ohio, $0.22; in Pennsylvania, $0.08; in West Virginia, $0.17. In the Western states, where the difference was $0.03 per ton, less than half the output of the "mixed" mines was machine mined.

The differences in average wage payments and in average total expenses per ton shown by this table are not to be taken as measuring precisely the general advantage of machine over pick mining. Numerous other factors also affect expenses. For example, in every instance except the Western states, the mines using the machine method exclusively, and also the "mixed" group, show a larger average output per mine than the pick mines, which doubtless tends to reduce the expenses of production. Differences in the regularity of operation may also affect the expenses of production, while diversity of wage scales and variations, not only in the thickness and character of the veins worked, but also in numerous other details of mine operation, such as haulage, drainage, ventilation, and the preparation of coal, likewise affect costs. It is likely that the mines using machines for undercutting and shearing coal have also adopted better methods in these other details of operation, but probably a large part of the difference in average expenses per ton shown for the classes of mines in this table is due to the use or nonuse of mining machines.

Expenses and related data for mines classified according to kind of opening, selected states.—Table 54 gives, for selected states, comparative expenses, with related analytical data, for mines classified according to the kind of opening as defined in connection with Table 42. Open cuts are omitted because the number of such operations is small. Mines not reporting expenses separately, mines including the cost of coke manufacture in their expenses reported, and mines with two or more kinds of openings, are excluded because the data for such mines would have no significance. No United States totals are given because conditions other than the kind of opening differ so widely in different states as to render such totals valueless for comparative purposes.

STATISTICS OF BITUMINOUS COAL MINES CLASSIFIED ACCORDING TO KIND OF OPENING: 1909.

[Exclusive of mines with coke manufacture.]

Table 54	Number of mines.	EXPENSES.		COAL PRODUCED.					NUMBER OF WAGE EARNERS.		PRIMARY HORSEPOWER.	
STATE AND CHARACTER OF MINE OPENING.				Tons (2,000 pounds).		Per cent of total tonnage.		Value at mines.				
		Total.	Average per ton.	Total.	Average per mine.	Mined by machines.	Sold locally.		Total.	Average per mine.	Total.	Average per mine.
Illinois:												
Shaft mines	509	$48,805,106	$1.01	48,097,159	94,493	37.5	4.4	$50,082,859	69,523	137	157,302	309
Slope mines	56	589,531	1.14	517,281	9,237	....	33.5	624,524	1,001	18	1,504	27
Drift mines	22	229,619	0.91	252,868	11,494	....	49.2	288,988	447	20	458	21
Ohio:												
Shaft mines	67	4,580,520	1.12	4,087,321	61,005	85.6	2.3	4,477,244	7,477	112	18,579	277
Slope mines	60	2,272,146	1.07	2,117,234	35,287	78.5	2.8	2,150,501	3,945	66	8,638	144
Drift mines	403	10,044,230	0.96	10,503,436	26,063	75.5	5.3	10,383,318	16,290	40	29,281	73
Pennsylvania:												
Shaft mines	55	6,093,886	0.98	6,223,447	113,154	66.1	1.7	5,965,817	7,909	144	24,554	446
Slope mines	76	6,079,058	0.95	6,430,217	84,608	59.7	1.9	6,363,768	8,148	107	20,217	266
Drift mines	758	34,285,681	0.93	36,927,127	48,717	45.3	2.8	37,704,318	50,076	66	88,842	117
West Virginia:												
Shaft mines	29	2,411,495	1.06	2,282,226	78,697	54.0	1.3	1,901,820	3,264	113	11,501	397
Slope mines	22	1,287,800	1.10	1,175,252	53,421	46.3	2.7	1,036,587	1,412	64	4,022	183
Drift mines	382	18,668,236	0.87	21,388,002	55,990	49.5	1.3	18,434,841	29,358	77	56,793	149
Western States:[1]												
Shaft mines	36	3,255,860	1.52	2,141,432	59,484	51.6	4.2	3,206,703	3,530	98	9,067	252
Slope mines	121	11,591,048	1.37	8,462,898	69,941	14.0	2.4	13,655,663	11,630	96	44,136	365
Drift mines	77	4,039,252	1.37	2,953,841	38,362	37.0	2.6	5,023,416	4,147	54	11,664	151

[1] Includes Colorado, Montana, New Mexico, Utah, and Wyoming.

This table shows that in all the states covered, shaft mines were comparatively large operations. In Illinois drifts and slopes were small workings largely dependent on local trade, while in the other states shown they were larger, and, although usually of smaller average output than shafts, were important commercial producers.

Since drainage and haulage expenses are usually lower in drifts than in shafts and slopes, drift mines would be expected to have lower average expenses per ton than shafts and slopes in the same field. Although somewhat obscured by other factors, Table 54 shows this to be the general result. The figures of these three groups of mines in Illinois are not strictly comparable owing to the difference in the scale of production and in methods of mining, and to the fact that in the Illinois drifts a number of proprietors and partners performed services for which no compensation was included. However, in Ohio, Pennsylvania, West Virginia, and the Western states, where the returns for these different classes are fairly comparable, the average expenses per ton for drifts were from $0.05 to $0.19 lower than those for shafts. In connection with these figures the remarks following Table 53 as to the significance of such averages should be borne in mind and it should be clearly understood that other factors, such as the differences in rates of wages, methods of mining and the scale of production may render the kind of mine opening a distinctly minor factor in determining the expense of production. Accordingly these figures are to be taken, not as measuring precisely the advantage of one kind of opening over another in these states, but only as indicating such advantage in a general way.

Although not shown in this table, the open cuts or strippings in Iowa, Kansas, and Missouri (taken together) reported an average expense of $1.17 per ton, as compared with $1.55 per ton for slopes and for shafts in these states. Many of these open cuts, supplying chiefly local trade, were worked rather primitively, but others made use of the latest mechanical equipment for such operations.

In every instance the table shows a higher average horsepower per mine for shafts and slopes than for drifts. Although the smaller average output of the drifts doubtless accounts for a part of this difference, it is also in part due probably to the relatively greater power requirements of shafts and slopes for handling coal and draining the workings.

Royalty payments, by states: 1909.—Table 55 gives for different states the number of tons of coal produced by mines operated on lands held under lease by operators, the total amount of royalties paid by these producers, and the average royalty per ton.

This table does not cover all mines operated on land held under lease by the operators. The reports for numerous mines of this kind were combined by the operators with the reports of other mines operated on land owned by the producers, and the mines covered by such combined reports could not be included in this table. However, the figures do cover a sufficient number of mines to show the general rates of royalty prevailing in different states.

Table 55	MINES ON LEASED LAND.		
STATE.	Total tons of coal produced (2,000 pounds).	Royalties.	
		Amount.	Average per ton.
United States	**82,912,956**	**$6,882,568**	**$0.08**
Alabama	1,639,539	112,892	0.07
Arkansas	550,642	74,974	0.14
Colorado	1,660,106	192,528	0.12
Illinois	5,940,057	408,269	0.07
Indiana	2,506,029	162,724	0.06
Iowa	2,365,695	182,743	0.08
Kansas	1,868,893	173,652	0.09
Kentucky	3,056,051	247,677	0.08
Missouri	1,065,589	87,963	0.08
Ohio	4,022,418	272,013	0.07
Oklahoma	2,906,888	260,517	0.09
Pennsylvania:			
Without coke made at mines	19,222,867	1,650,285	0.09
With coke made at mines	2,177,650	333,388	0.15
Tennessee	3,043,900	337,985	0.11
Virginia	2,761,667	191,646	0.07
West Virginia:			
Without coke made at mines	15,538,143	1,222,914	0.08
With coke made at mines	10,573,269	759,180	0.07
Wyoming	688,717	68,379	0.10
All other states [1]	1,324,836	142,839	0.11

[1] Includes Maryland, Michigan, Montana, New Mexico, North Dakota, Oregon, Texas, Utah, and Washington.

The average rate of royalty shown for the United States in 1909 was $0.08 per ton. Indiana shows the lowest average, $0.06 per ton, while the highest were reported from Arkansas, $0.14 per ton, and Pennsylvania, for mines at which coke was made, $0.15 per ton. The superior quality of the Arkansas semianthracite and of some of the Pennsylvania coking coal explains these higher rates.

PERSONS ENGAGED IN THE INDUSTRY.

Classification according to general occupational status, by states: 1909.—The number of persons engaged in the bituminous coal industry in 1909, classified according to general occupational status, is shown, by states, in Table 56.

Wage earners constituted 96.1 per cent of all persons reported in the industry in the United States as a whole, and the proportion did not vary greatly from state to state. Owing to the prevalence of incorporated companies, the number of individual proprietors and firm members was relatively small. These were generally small operators, and nearly one-half of the total number were reported as performing manual labor in mines. Many of these latter were the proprietors of small local "banks" with few or no wage earners.

Table 56

STATE.	Total.	Proprietors and firm members.	Salaried officers of corporations.	Superintendents and managers.	Clerks and other salaried employees.	Wage earners, number December 15, 1909, or nearest representative day.	Proprietors and firm members performing manual labor.
All mines:							
United States[1]	**592,677**	**3,739**	**2,315**	**5,566**	**11,268**	**569,789**	**1,713**
MINES WITHOUT COKE MANUFACTURE.							
United States[1]	**453,473**	**3,648**	**2,005**	**4,188**	**8,218**	**435,414**	**1,709**
Alabama	12,427	40	109	171	386	11,721	6
Arkansas	5,678	38	27	70	81	5,462	20
Colorado	10,942	165	65	151	193	10,368	10
Illinois	76,761	528	243	593	952	74,445	359
Indiana	23,109	202	99	157	294	22,357	110
Iowa	18,332	298	79	137	195	17,623	225
Kansas	13,374	283	40	78	182	12,791	152
Kentucky	18,869	118	170	229	417	17,935	39
Maryland	6,069	28	20	82	141	5,798	13
Michigan	3,782	104	17	33	56	3,572	70
Missouri	9,991	244	32	105	84	9,526	208
North Dakota	954	51	5	21	20	857	19
Ohio	46,046	421	201	371	648	44,405	203
Oklahoma	9,124	35	39	69	167	8,814	22
Oregon	271	9	1	4	6	251	9
Pennsylvania	119,972	724	336	911	1,927	116,074	179
Tennessee	8,931	20	69	102	270	8,470	9
Texas	4,416	8	22	49	103	4,234	......
Virginia	3,197	10	26	32	68	3,061	......
Washington	6,035	6	15	40	117	5,857	2
West Virginia	38,107	57	194	475	918	36,463	12
Wyoming	8,267	185	24	63	156	7,839	4
All other states[2]	7,816	74	34	71	146	7,491	38
MINES WITH COKE MANUFACTURE.							
United States	**139,204**	**91**	**310**	**1,378**	**3,050**	**134,375**	**4**
Alabama	12,395	......	26	210	401	11,758	......
Colorado	5,224	......	8	28	95	5,093	......
Kentucky	1,763	......	3	17	23	1,720	......
Pennsylvania	70,630	84	139	802	1,271	68,334	4
Connellsville dist.	48,391	78	96	655	827	46,735	2
Tennessee	2,798	......	9	35	70	2,684	......
Virginia	7,221	5	16	39	180	6,981	......
Washington	313	......	1	7	7	298	......
West Virginia	34,370	2	93	217	855	33,203	......
All other states[3]	4,490	......	15	23	148	4,304	......

[1] Includes 138 salaried officers of corporations, 174 superintendents and managers and 691 clerks employed in general offices who could not be distributed among the individual states; the states to which their services related were Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Montana, Ohio, Oklahoma, Pennsylvania, Texas, Washington, West Virginia, and Wyoming.

[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

[3] Includes Georgia, Montana, New Mexico, and Utah.

Classification of wage earners according to occupation, by states: 1909.—The following table gives for mines with and without coke manufacture in different states, the average number of miners and miners' helpers per mine, the percentage of wage earners employed outside and inside, and the percentage in various occupations. The absolute numbers appear in Table 62. For mines with coke manufacture the percentages are based on all wage earners, including those in the coke branch of the business.

The table shows, of course, a much higher percentage of wage earners employed above ground for mines combining coal mining with coke manufacture than for mines without coke ovens. In the mines without coke manufacture considerable variation appears among different states in the proportions of wage earners employed outside and inside, the percentage employed inside ranging from 91.2 per cent in Kansas to 76.8 per cent in North Dakota. These variations are due chiefly to different methods of mine operation and coal preparation, which also explain the variations in the proportions for the different occupations.

The marked variations from state to state in the percentages for mines with coke manufacture are due chiefly to the fact that in some states most of the mines in this group coked a large part of their coal and hence required relatively more coke employees, while other mines of this group made but little coke and had few employees of this kind. In the Connellsville district, a region of great coke production, miners and miners' helpers constituted but 46 per cent of the total number of employees; while in Kentucky, where coke production was relatively insignificant, this class constituted 83.5 per cent of the total for mines with coke manufacture.

Table 57

STATE.	PER CENT OF WAGE EARNERS EMPLOYED—		PER CENT OF WAGE EARNERS EMPLOYED AS—				Average number of miners and miners' helpers per mine.
	Outside.	Inside.	Engineers, firemen, and mechanics.	Miners and miners' helpers.	Others 16 years and over.	Boys under 16 years.	
All mines:							
United States	**16.5**	**83.5**	**5.2**	**67.4**	**26.7**	**0.7**	**64**
MINES WITHOUT COKE MANUFACTURE.							
United States	**11.8**	**88.2**	**5.1**	**72.2**	**22.2**	**0.8**	**59**
Alabama	14.6	85.4	6.3	69.6	23.0	1.2	49
Arkansas	12.8	87.2	7.2	69.6	23.0	0.2	65
Colorado	16.5	83.5	5.7	67.2	26.8	0.4	50
Illinois	9.7	90.3	5.0	71.9	23.1	0.1	85
Indiana	9.4	90.6	4.5	76.6	18.6	0.2	53
Iowa	10.1	89.9	4.3	74.2	20.8	0.7	42
Kansas	8.8	91.2	4.0	78.0	18.0	(1)	49
Kentucky	13.7	86.3	4.9	73.5	21.3	0.4	44
Maryland	16.8	83.2	4.3	66.1	26.7	2.8	55
Michigan	8.9	91.1	5.9	78.3	15.9	......	100
Missouri	10.4	89.6	3.7	73.6	22.4	0.2	32
North Dakota	23.2	76.8	5.6	67.8	26.5	0.1	11
Ohio	9.2	90.8	4.4	74.7	20.5	0.4	52
Oklahoma	17.2	82.8	9.0	61.4	29.6	(1)	52
Oregon	15.9	84.1	11.2	78.1	10.8	......	22
Pennsylvania	10.5	89.5	4.5	75.6	19.2	0.7	74
Tennessee	14.3	85.7	4.9	69.1	24.3	1.7	45
Texas	13.7	86.3	5.5	75.4	19.1	......	68
Virginia	12.7	87.3	5.1	63.4	30.6	0.9	44
Washington	21.0	79.0	8.1	64.0	27.4	0.5	73
West Virginia	16.1	83.9	6.1	63.0	29.6	1.4	48
Wyoming	16.3	83.7	5.8	64.5	29.7	0.1	78
All other states[2]	20.4	79.6	10.4	65.7	23.6	0.4	46
MINES WITH COKE MANUFACTURE.							
United States	**31.9**	**68.1**	**5.7**	**51.9**	**41.4**	**0.9**	**108**
Alabama	37.8	62.2	10.4	45.2	41.9	2.4	148
Colorado	33.1	66.9	7.3	52.5	40.0	0.2	178
Kentucky	15.6	84.4	7.3	83.5	9.2	......	131
Pennsylvania	33.0	67.0	4.2	51.6	43.7	0.5	107
Connellsville dist.	37.7	62.3	4.4	46.0	49.0	0.5	90
Tennessee	23.6	76.4	4.3	55.8	36.5	3.3	115
Virginia	39.9	60.1	8.8	43.4	46.4	1.4	74
Washington	35.9	64.1	9.7	28.9	61.4	......	29
West Virginia	27.6	72.4	6.2	53.4	39.3	1.0	97
All other states[3]	26.8	73.2	6.1	63.5	27.5	2.9	161

[1] Less than one-tenth of 1 per cent.

[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.

[3] Includes Georgia, Montana, New Mexico, and Utah.

Maximum and minimum numbers of wage earners reported, by states: 1909.—The next table gives, for different states, the number of wage earners employed December 15, 1909, or the nearest representative day,[1] together with the number employed on the 15th day of the month of maximum employment, and the number employed on the 15th day of the month of minimum employment, with the per cent which the latter forms of the maximum number.

---

[1] See footnote to text accompanying Table 18, Part I.

Table 58

STATE.	Number of wage earners Dec. 15, 1909, or nearest representative day.	MAXIMUM MONTH.		MINIMUM MONTH.		
		Month.	Number.	Month.	Number.	Per cent of maximum.
All mines:						
United States	**569,789**	**Dec.**	**560,089**	**May**	**478,455**	**85.4**
MINES WITHOUT COKE MANUFACTURE.						
United States	**435,414**	**Dec.**	**424,407**	**May**	**359,174**	**84.6**
Alabama	11,721	Dec.	11,456	July	9,884	86.3
Arkansas	5,462	Nov.	5,253	Apr.	2,674	50.9
Colorado	10,368	Dec.	10,303	July	7,235	70.2
Illinois	74,445	Dec.	71,193	June	58,799	82.6
Indiana	22,357	Dec.	21,318	June	16,670	78.2
Iowa	17,623	Dec.	17,235	June	13,381	77.6
Kansas	12,791	Dec.	12,586	May	9,906	78.7
Kentucky	17,935	Dec.	17,435	May	12,984	74.5
Maryland	5,798	Jan.	5,825	Aug.	5,257	90.2
Michigan	3,572	Jan.	3,703	May	3,112	84.0
Missouri	9,526	Dec.	9,370	May	5,616	59.9
North Dakota	857	Dec.	848	June	321	37.9
Ohio	44,405	Nov.	43,770	May	36,684	83.8
Oklahoma	8,814	Dec.	8,720	May	6,377	73.1
Oregon	251	Feb.	270	July	112	41.5
Pennsylvania	116,074	Dec.	113,913	Apr.	100,236	88.0
Tennessee	8,470	Jan.	8,559	July	7,633	89.2
Texas	4,234	Oct.	4,174	Aug.	3,896	93.3
Virginia	3,061	July	3,343	Feb.	2,472	73.9
Washington	5,857	Nov.	5,752	Mar. Apr.	5,376	93.5
West Virginia	36,463	Nov.	35,901	Mar.	31,862	88.7
Wyoming	7,839	Dec.	7,825	July	6,563	83.9
All other states[1]	7,491	Dec.	7,404	May	5,891	79.6
MINES WITH COKE MANUFACTURE.						
United States	**134,375**	**Dec.**	**135,682**	**May**	**119,281**	**87.9**
Alabama	11,758	Dec.	13,171	June	10,292	78.1
Colorado	5,093	Dec.	5,093	June	4,313	84.7
Kentucky	1,720	Jan.	1,849	June	1,595	86.3
Pennsylvania	68,334	Dec.	68,233	Apr.	58,584	85.9
Connellsville district	46,735	Dec.	46,656	Apr.	37,944	81.3
Tennessee	2,684	Nov.	2,717	July	2,325	85.6
Virginia	6,981	Dec.	6,981	May	5,653	81.0
Washington	298	May	330	Mar.	282	85.5
West Virginia	33,203	Nov.	33,260	Apr.	30,995	93.2
All other states[2]	4,304	Apr.	4,583	Oct.	3,996	87.2

[1] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.
[2] Includes Georgia, Montana, New Mexico, and Utah.

The above table shows that in the United States as a whole the maximum number of wage earners reported in the industry on the 15th day of any month, namely, 560,089, was employed December 15, 1909, while the minimum number reported, namely, 478,455, was employed May 15, 1909. For mines without coke manufacture Washington showed the greatest regularity of employment, with the minimum number employed equaling 93.5 per cent of the maximum. Next in order in this respect was Texas (93.3 per cent), Maryland (90.2 per cent), Tennessee (89.2 per cent), and West Virginia (88.7 per cent). North Dakota shows the greatest irregularity, with the minimum number reported equaling only 37.9 per cent of the maximum. For mines with coke manufacture West Virginia showed the greatest regularity of employment, the number of wage earners in the minimum month equaling 93.2 per cent of that in the maximum month, while the greatest variation is shown for Alabama.

Hours of labor, by states.—The following table gives, by states, the number and percentage of mines operated specified numbers of hours per day or per shift, together with the percentage of the total number of wage earners (including those engaged in coke manufacture) employed by each class of mines. As explained in connection with Table 19, the latter percentages can not be taken as showing precisely the relative number of wage earners working the number of hours specified—for example, engineers, firemen, pumpmen, etc., sometimes work longer hours than the general standard for the mine, and at some mines with coke ovens the coke men work longer hours than the mine employees. However, these percentages may be taken as showing roughly the general distribution of wage earners according to hours of labor. Mines employing no wage earners are omitted from the table.

BITUMINOUS COAL MINES CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF OPERATION PER DAY OR PER SHIFT, BY STATES: 1909.

Table 59

STATE.	Total number of mines.	NUMBER OF MINES OPERATED (PER DAY OR SHIFT)—						PER CENT OF TOTAL NUMBER OF MINES OPERATED—						PER CENT OF WAGE EARNERS EMPLOYED IN MINES OPERATED—					
		Less than 8 hours.	8 hours.	9 hours.	10 hours.	12 hours.	Hours not specified.	Less than 8 hours.	8 hours.	9 hours.	10 hours.	12 hours.	Hours not specified.	Less than 8 hours.	8 hours.	9 hours.	10 hours.	12 hours.	Hours not specified.
Total	**5,976**	**65**	**3,747**	**810**	**1,270**	**9**	**77**	**1.1**	**62.7**	**13.5**	**21.2**	**0.2**	**1.3**	**0.4**	**56.5**	**13.8**	**25.4**	**0.9**	**1.1**
Alabama	203	2	37	51	103	3	7	1.0	18.2	25.1	50.7	1.5	3.4	0.1	8.5	26.5	43.7	14.3	7.0
Arkansas	69	......	69	......	......	......	......	......	100.0	......	......	......	......	......	100.0	......	......	......	......
Colorado	154	......	70	23	61	......	......	......	45.5	14.9	39.6	......	......	......	28.7	10.3	61.0	......	......
Illinois	628	9	600	4	6	......	9	1.4	95.5	0.6	1.0	......	1.4	0.6	99.3	0.1	0.1	......	......
Indiana	320	15	289	6	1	......	9	4.7	90.3	1.9	0.3	......	2.8	1.3	98.3	0.2	0.2	......	......
Iowa	308	3	291	7	3	......	4	1.0	94.5	2.3	1.0	......	1.3	1.4	96.6	0.3	0.1	......	1.6
Kansas	199	1	167	21	2	......	8	0.5	83.9	10.6	1.0	......	4.0	1.4	96.7	1.7	0.1	......	(1)
Kentucky	310	3	93	85	127	......	2	1.0	30.0	27.4	41.0	......	0.6	1.0	32.8	24.4	41.8	......	......
Maryland	70	1	5	11	53	......	......	1.4	7.1	15.7	75.7	......	......	0.1	0.3	12.7	86.9	......	......
Michigan	28	1	26	1	......	......	......	3.6	92.9	3.6	......	......	......	0.3	98.5	1.3	......	......	......
Missouri	217	......	192	18	2	......	6	......	88.5	8.3	0.9	......	2.3	......	97.8	1.8	0.2	0.1	......
Montana	65	2	63	......	......	......	......	3.1	96.9	......	......	......	......	0.3	99.7	......	......	......	......
New Mexico	27	......	3	10	14	......	......	......	11.1	37.0	51.9	......	......	......	1.0	25.8	73.2	......	......
North Dakota	51	1	18	11	21	......	......	2.0	35.3	21.6	41.2	......	......	0.9	26.8	16.7	55.6	......	......
Ohio	634	8	591	21	14	......	......	1.3	93.2	3.3	2.2	......	......	0.8	97.7	1.2	0.2	......	......
Oklahoma	104	1	97	......	6	......	......	0.9	93.3	......	5.8	......	......	0.2	98.0	......	1.8	......	......
Oregon	9	......	7	1	1	......	......	......	77.8	11.1	11.1	......	......	......	45.0	1.2	53.8	......	......
Pennsylvania	1,502	14	904	310	268	2	4	0.9	60.2	20.6	17.8	0.1	0.3	0.1	52.4	23.6	23.2	0.8	(1)
Tennessee	140	2	17	80	34	4	3	1.4	12.1	57.1	24.3	2.9	2.1	1.4	10.1	47.7	32.6	1.6	6.8
Texas	47	......	27	2	16	......	2	......	57.4	4.3	34.0	......	4.3	......	69.5	1.5	27.5	......	1.6
Utah	22	......	19	1	......	......	2	......	86.4	4.5	......	......	9.1	......	99.8	0.2	......	......	......
Virginia	85	......	3	11	68	......	3	......	3.5	12.9	80.0	......	3.5	......	0.6	5.7	89.6	......	4.0
Washington	54	......	51	1	1	......	1	......	94.4	1.9	1.9	......	1.9	......	98.8	0.9	0.3	......	......
West Virginia	659	2	42	132	466	......	17	0.3	6.4	20.0	70.7	......	2.6	0.4	2.7	18.8	74.0	......	4.2
Wyoming	65	......	59	2	3	......	1	......	90.8	3.1	4.6	......	1.5	......	99.5	0.1	0.5	......	......
All other states[2]	8	......	7	1	......	......	......	......	87.5	12.5	......	......	......	......	16.5	83.5	......	......	......

[1] Less than one-tenth of 1 per cent.
[2] Includes California, Georgia, and Idaho.

The table shows that nearly 60 per cent of all the wage earners were employed in mines operated on an 8-hour basis; nearly 14 per cent in mines operated on a 9-hour basis; and about 25 per cent in mines operated on a 10-hour basis. There was considerable variation in the prevailing hours of labor in different states. In Illinois, Indiana, Iowa, Ohio, in some districts of Pennsylvania, and in various other fields, the time of operation was fixed at 8 hours by agreement between the operators and the mine workers. In most other states the most common working time was 9 or 10 hours per day.

POWER.

Mines operated with and without mechanical power, by states: 1909.—The following table classifies bituminous coal mines according to their operation with or without mechanical power, gives the number of mines and total output for each class and the average horsepower per mine for mines using mechanical power (including that used in coke manufacture, which is relatively unimportant). It should be remembered that the many small mines or banks producing less than 1,000 tons each—most of which use no mechanical power—were not canvassed at the census of 1909.

Table 60

STATE.	NUMBER OF MINES.			Average horsepower per mine with power.	TONS (2,000 POUNDS) OF COAL PRODUCED BY MINES—		PER CENT OF COAL PRODUCED BY MINES—	
	Total.	With power.	Without power.		With power.	Without power.	With power.	Without power.
All mines:								
United States	**6,013**	**4,584**	**1,429**	**268**	**366,962,460**	**9,903,050**	**97.4**	**2.6**
MINES WITHOUT COKE MANUFACTURE.								
United States	**5,365**	**3,943**	**1,422**	**231**	**270,888,623**	**9,763,417**	**96.5**	**3.5**
Alabama	167	128	39	147	6,042,774	473,148	92.7	7.3
Arkansas	69	60	9	175	2,336,613	37,006	98.4	1.6
Colorado	140	117	23	234	6,855,459	139,297	98.0	2.0
Illinois	631	564	67	295	50,241,053	329,450	99.3	0.7
Indiana	322	266	56	173	14,582,185	141,046	99.0	1.0
Iowa	311	219	92	87	7,391,029	334,650	95.7	4.3
Kansas	202	154	48	128	6,771,665	123,995	98.2	1.8
Kentucky	299	205	94	187	8,539,351	846,827	91.0	9.0
Maryland	70	49	21	201	3,808,065	193,207	95.2	4.8
Michigan	28	28	.....	283	1,772,315	....	100.0	.....
Missouri	220	142	78	84	3,360,805	235,886	93.4	6.6
North Dakota	63	19	34	107	280,191	84,345	76.9	23.1
Ohio	640	390	250	250	26,495,762	1,023,002	96.3	3.7
Oklahoma	104	92	12	286	3,057,934	55,215	98.2	1.8
Oregon	9	7	2	158	80,104	3,600	95.7	4.3
Pennsylvania	1,179	759	420	314	81,211,428	3,892,521	95.4	4.6
Tennessee	129	90	39	129	4,081,751	575,506	87.6	12.4
Texas	47	45	2	138	1,820,825	3,917	99.8	0.2
Virginia	44	31	13	168	1,385,570	104,565	93.0	7.0
Washington	51	48	3	339	3,486,890	9,352	99.7	0.3
West Virginia	479	413	66	192	26,209,829	957,102	96.5	3.5
Wyoming	65	53	12	530	6,241,860	52,736	99.2	0.8
All other states[1]	106	64	42	367	4,835,165	147,044	97.0	3.0
MINES WITH COKE MANUFACTURE.								
United States	**648**	**641**	**7**	**494**	**96,073,837**	**139,633**	**99.9**	**0.1**
Alabama	36	36	.....	981	7,160,639	....	100.0	.....
Colorado	15	15	.....	449	3,648,112	....	100.0	.....
Kentucky	11	11	.....	537	1,175,098	....	100.0	.....
Pennsylvania	330	325	5	512	(2)	(2)	(2)	(2)
Connellsville district	238	235	3	473	(2)	(2)	(2)	(2)
Tennessee	13	13	.....	346	1,315,673	....	100.0	.....
Virginia	41	40	1	285	(2)	(2)	(2)	(2)
Washington	3	3	.....	187	104,971	....	100.0	.....
West Virginia	182	181	1	422	(2)	(2)	(2)	(2)
All other states[3]	17	17	.....	557	2,820,225	....	100.0	.....

These figures show that 1,429 mines, or nearly one-fourth of the entire number reporting, operated without the use of mechanical power in 1909; only 7 of these had coke manufacture. Mines without power are widely distributed among the states, but their relative importance is much greater in some states than in others. Such mines generally are small irregular producers depending largely on local trade. (See also Table 53.) For the United States these mines showed in 1909 an average output of less than 7,000 tons per mine as compared with about 80,000 tons for mines operated with mechanical power.

The variations in average horsepower per mine from state to state are due to differences in the kind of mine openings, the scale of production, the methods of operation, and the degree of development reached.

It will be observed that mines combining coal mining with coke manufacture show a much greater average horsepower per mine than mines without coke ovens. This is due, not so much to the need of power for the operation of the coke-yard machinery as to the fact that the mines of this group are generally much larger mines than those without coke manufacture. The average output of such mines was nearly 150,000 tons per mine, as compared with an average of less than 55,000 tons for mines without coke manufacture.

Comparative statistics of power, by states: 1909 and 1902.—The next table gives, by states, for 1909 and 1902, the total primary horsepower used in bituminous coal mines, the number and horsepower of steam engines, the number and horsepower of electric motors run by current generated by the operators themselves, together with the percentage of increase in the various items. The difference—comparatively small—between total primary power and power of steam engines is represented chiefly by the power of electric motors operated by purchased current. (See Table 62.)

In preparing this table no deduction was made on account of power used for coke manufacture at the mines, since one power plant ordinarily suffices for both mine and ovens, and since only a relatively small amount of the total power is used in coke manufacture.

The table shows a great increase in the use of mechanical power from 1902 to 1909. For the entire United States steam engines show an increase of 80.2 per cent in number and 145.5 per cent in total horsepower while the average horsepower per engine increased from 75 to 102 horsepower, or 36 per cent. Electric motors run by current generated by the mine operators increased 635 per cent in number and 400 per cent in total horsepower. This advance in the use of power was much more rapid than the increase in coal production, as shown by the fact that the total output of coal from 1902 to 1909 increased but 45 per cent, while the total primary horsepower increased nearly 150 per cent. The greatest percentages of increase in primary horsepower appeared in the following states: Kentucky, 267.1 per cent; West Virginia, 247.6 per cent; Texas, 228.1 per cent; Tennessee, 199.2 per cent; Pennsylvania, 196.1 per cent; and Alabama, 194.7 per cent. In the same period the coal output of these states increased as follows: Kentucky, 56.1 per cent; West Virginia, 109.6 per cent; Texas, 102.3 per cent; Tennessee, 44.9 per cent; Pennsylvania, 39.3 per cent; and Alabama, 32.1 per cent. The lowest percentages of increase in total horsepower were in Maryland, Missouri, Iowa, Wyoming, Arkansas, Washington, and Kansas; but even in these states the increase in total horsepower was far greater than the increase in the coal output for the same period. These figures of increase in the use of power reflect the general improvement in the scale of production and in various details of mine operation which has characterized this period.

---

[1] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah.
[2] Omitted in order to avoid disclosing operations of individual operators.
[3] Includes Georgia, Montana, New Mexico, and Utah.

STEAM ENGINES AND POWER AT BITUMINOUS COAL MINES, BY STATES: 1909 AND 1902.

Table 61

STATE.	Census.	Total primary horsepower.	STEAM ENGINES.		ELECTRIC MOTORS RUN BY CURRENT GENERATED BY THE MINE OPERATORS.	
			Number.	Horsepower.	Number.	Horsepower.
United States	1909	1,227,401	11,738	1,199,430	9,717	329,298
	1902	493,148	6,513	488,478	1,322	65,927
Per cent of increase	......	148.9	80.2	145.6	636.0	399.5
Alabama	1909	54,084	503	53,334	366	11,584
	1902	18,350	279	18,264	......	......
Per cent of increase	......	194.7	80.3	192.0	......	......
Arkansas	1909	10,508	140	10,508	20	1,746
	1902	6,437	153	6,432	15	940
Per cent of increase [1]	......	63.2	−8.5	63.4	33.3	85.7
Colorado	1909	34,085	404	32,132	281	9,816
	1902	16,449	258	16,192	83	3,276
Per cent of increase	......	107.2	56.6	98.4	238.6	199.6
Illinois	1909	166,174	1,987	165,441	298	12,165
	1902	78,586	1,212	78,493	102	4,322
Per cent of increase	......	111.5	63.9	110.8	192.2	181.5
Indiana	1909	45,910	577	45,739	187	7,476
	1902	22,045	393	22,026	29	2,247
Per cent of increase	......	108.3	46.8	107.7	544.8	232.7
Iowa	1909	19,118	354	18,746	32	1,375
	1902	11,815	298	11,673	14	296
Per cent of increase	......	61.8	18.8	60.6	128.6	364.5
Kansas	1909	19,707	330	19,604	15	960
	1902	11,812	220	11,795	9	270
Per cent of increase	......	66.8	50.0	66.2	66.7	255.6
Kentucky	1909	44,314	563	43,230	354	11,736
	1902	12,071	191	11,881	40	1,824
Per cent of increase	......	267.1	194.8	263.9	785.0	543.4
Maryland	1909	9,846	194	9,795	40	1,273
	1902	7,624	54	7,612	......	......
Per cent of increase	......	29.1	259.3	28.7	......	......
Michigan	1909	7,912	94	7,900	47	2,162
	1902	3,701	46	3,699	12	376
Per cent of increase	......	113.8	104.3	113.6	291.7	475.0
Missouri	1909	11,898	238	11,619	78	2,042
	1902	8,220	190	8,184	7	300
Per cent of increase	......	44.7	25.3	42.0	1,014.3	580.7
North Dakota	1909	2,025	37	2,014	26	565
	1902	839	21	839	12	86
Per cent of increase	......	141.4	76.2	140.0	116.7	557.0
Ohio	1909	97,422	1,003	95,545	1,211	35,501
	1902	45,790	597	45,517	131	5,527
Per cent of increase	......	112.8	68.0	109.9	824.4	542.3
Oklahoma	1909	26,316	277	25,881	31	1,700
	1902	12,709	169	12,709	9	290
Per cent of increase	......	107.1	63.9	103.6	244.4	486.2
Oregon	1909	1,109	15	1,109	9	200
	1902	527	11	527	......	......
Per cent of increase	......	110.4	30.4	110.4	......	......
Pennsylvania	1909	404,654	2,993	393,371	3,617	115,195
	1902	136,666	1,440	134,932	432	20,508
Per cent of increase	......	196.1	107.8	191.5	737.3	461.7
Tennessee	1909	16,075	153	16,027	103	4,054
	1902	5,372	65	5,278	12	760
Per cent of increase	......	199.2	135.4	203.7	758.3	433.4
Texas	1909	6,217	92	6,217	......	......
	1902	1,895	53	1,895	1	40
Per cent of increase [1]	......	228.1	73.6	228.1	−100.0	−100.0
Virginia	1909	16,630	128	16,451	296	9,776
	1902	6,221	52	5,846	28	1,280
Per cent of increase	......	167.3	146.2	181.4	957.1	663.7
Washington	1909	16,812	133	16,300	169	5,834
	1902	10,146	85	9,116	77	2,138
Per cent of increase	......	65.7	56.5	78.8	119.5	173.5
West Virginia	1909	155,576	1,114	149,815	2,232	81,598
	1902	44,757	433	44,495	217	16,894
Per cent of increase	......	247.6	157.3	236.7	928.6	383.0
Wyoming	1909	28,071	172	27,356	79	2,461
	1902	17,283	132	17,283	24	1,079
Per cent of increase	......	62.4	30.3	58.3	229.2	128.1
All other states [2]	1909	32,939	237	31,296	226	10,080
	1902	13,833	161	13,790	68	3,479
Per cent of increase	......	138.1	47.2	126.9	232.4	189.7

---

[1] A minus sign (—) denotes decrease.

[2] Includes California, Georgia, Idaho, Montana, New Mexico, and Utah in 1909; Alaska, California, Georgia, Idaho, Montana, New Mexico, North Carolina, and Utah in 1902.

PART IV.—GENERAL STATISTICS: 1909.

INTRODUCTION.

The principal statistics obtained by the census of coal mines in 1909 are given for the different states in the following general summary. The table gives for the United States as a whole the data obtained not only for producing, but also for nonproducing mines, that is, those which were in course of development but which did not reach the producing stage during the year 1909. These data for nonproducing mines could not be published for the several states because of the disclosure of individual operations and are not included in any other table. This general summary does not include any statistics of mines operated by state penal institutions, nor of mines for which the operators failed to furnish full reports as to capital, expenses, employees, etc. The quantity and value of the coal produced by these mines—about 2,000,000 tons—are included in Tables 2, 4, 5, and 7, of Part I.

In the states of Alabama, Colorado, Kentucky, Montana, New Mexico, Pennsylvania, Tennessee, Utah, Virginia, Washington, and West Virginia coke is manufactured at many coal mines, and the returns received from numerous operators in these states covered coal mining and coke making combined. In view of this condition of the returns, and for the other reasons given on page 181 of this report, it was deemed advisable, in general, to present combined statistics of coal mining and coke manufacture where the two enterprises were conducted in combination. Accordingly, the totals given in this summary for the above states and for the United States include both coal mining and coke making at the mines. The statistics given in the upper portion of the table for Alabama, Colorado, Kentucky, Pennsylvania, Tennessee, Virginia, Washington, and West Virginia are subdivided in the lower portion under the headings (1) "Producing bituminous coal mines without coke manufacture," and (2) "Producing bituminous coal mines with coke manufacture." Under the first heading are given the statistics of mines in these states at which coke was not made, while under the second heading are given the combined statistics of coal mining and coke making for the mines at which coke manufacture was combined with mine operation. Such subdivision of the returns for Montana, New Mexico, and Utah could not be made on account of disclosing the business of individual concerns. It is recognized that for various reasons, such as comparison with the statistics of previous years, it is desirable to present certain data for coal mining in 1909 exclusive of coke manufacture. Accordingly, in Tables 2, 3, 4, 5, 6, 7, and 11, of Part I, and Tables 33, 34, 35, 36, 42, and 51, of Part III, the figures have been adjusted to give statistics of coal mining only, by deducting the estimated capital, expenses, wage earners, etc., attributable to the manufacture of coke at the mines.

The figures given for the anthracite industry include the statistics of river dredges and washeries, as well as of mines proper. The returns for river dredges are summarized in Table 21, and separate statistics for mines and for washeries are given in Table 28, Part II.

Stated briefly, then, the United States total for all mines, given in this general summary, is the total for all anthracite and bituminous enterprises, both producing and nonproducing, which rendered complete reports of their operations; the figures for anthracite coal cover river dredges and washeries, as well as mines proper, while those for bituminous include both coal mining and coke manufacture at the mines.

In the preliminary definitions and explanations, given on pages 181 and 182 of this report, the limitations of the census data are stated, the terms used are defined, and the methods of presenting the figures are explained in detail. These definitions and explanations relate to the scope of the census of coal mines, the period covered by the returns, the close connection of coal mining with coke manufacture at many mines, the treatment of subsidiary companies in determining the number of operators, the acreage of coal land controlled by coal mining concerns, the amount of capital invested, the expenses reported, the use of long and short tons in the statistics, the value of products, the number of persons engaged in the industry, and the figures for primary horsepower. Particular attention is directed to the remarks concerning the expenses reported. Those remarks consider mine development and depreciation, point out the limitations of the data obtained, give a full account of the method of dealing with administrative expenses of general offices when these were reported in toto by companies operating bituminous mines in more than one state, define the "gross" and "net" expenses shown for the anthracite industry, and give detailed explanations pertaining to the figures presented for wages, cost of supplies, and miscellaneous expenses. Attention is also directed to the remarks under "Value of products," referring not only to the amounts given for mines combining coal mining with coke manufacture, but also to the possible difference between the reported and the market value of products. All the definitions and explanations given on pages 181 and 182 must be taken into account in considering the statistics presented in this general summary.

COAL MINES—GENERAL STATISTICS, BY STATES: 1909.

Table 62 (pp. 228–233).

	STATE.	Number of mines.	LAND CONTROLLED (ACRES).								Capital.
			All land.			Coal land.			Timber land.	Other land.	
			Total.	Owned.	Held under lease.	Total.	Owned.	Held under lease.			
1	**UNITED STATES—All mines**	8,497	[1] 8,272,982	6,006,938	2,277,713	[1] 6,932,730	4,782,470	2,161,235	437,956	[1] 902,276	[2] $1,318,550,554
	ANTHRACITE										
2	All mines	[6] 429	[1] 465,647	316,868	160,468	[1] 274,870	183,144	102,701	71,851	[1] 118,926	246,950,806
3	Nonproducing mines	6	513	1	512	511	...	511	...	2	22,728
4	Producing mines	[6] 423	[1] 465,134	316,867	159,956	[1] 274,359	183,144	102,190	71,851	[1] 118,924	246,928,078
5	Pennsylvania	[6] 420	[1] 464,274	316,767	159,196	[1] 273,499	183,044	101,430	71,851	[1] 118,924	246,713,318
6	Colorado and New Mexico	3	860	100	760	860	100	760	...	...	214,760
	BITUMINOUS										
7	All mines	8,068	7,807,315	5,690,070	2,117,245	6,657,860	4,599,326	2,058,534	366,105	783,350	[2] 1,071,588,748
8	Nonproducing mines	55	89,700	54,827	34,873	84,674	49,914	34,760	2,740	2,286	9,402,665
	Producing mines:										
9	United States	8,013	7,717,615	5,635,243	2,082,372	6,573,186	4,549,412	2,023,774	363,365	781,064	[2] 1,062,197,083
10	Alabama	203	776,244	701,790	74,454	599,259	525,355	73,904	126,790	50,195	59,602,396
11	Arkansas	69	54,686	24,137	30,549	54,359	23,885	30,474	130	197	2,256,942
12	Colorado	155	113,636	84,915	28,721	92,942	65,101	27,841	400,	20,294	30,534,933
13	Illinois	631	585,366	424,739	160,627	552,396	395,965	156,431	3,255	29,715	75,257,667
14	Indiana	322	155,576	117,619	37,957	140,244	103,910	36,334	3,436	11,896	35,937,981
15	Iowa	311	77,796	26,771	51,025	70,192	20,152	50,040	472	7,132	7,212,033
16	Kansas	202	83,869	56,205	27,664	80,459	53,340	27,119	...	3,410	6,262,203
17	Kentucky	310	399,846	280,053	119,793	364,669	247,006	117,663	16,538	18,639	24,700,533
18	Maryland	70	92,814	88,129	4,685	68,220	63,596	4,624	8,345	15,249	22,871,136
19	Michigan	28	25,661	6,222	19,439	23,135	3,696	19,439	4	2,522	6,865,156
20	Missouri	220	119,822	74,519	45,303	116,108	70,805	45,303	160	3,554	5,650,407
21	Montana	65	54,335	44,098	10,237	49,825	39,588	10,237	1,880	2,630	8,546,343
22	New Mexico	28	294,318	240,124	54,194	115,549	64,929	50,620	...	178,769	23,558,127
23	North Dakota	53	14,695	12,300	2,395	10,356	7,971	2,385	...	4,339	1,023,278
24	Ohio	640	432,204	283,439	148,765	406,336	260,423	145,913	5,767	20,101	64,131,141
25	Oklahoma	104	82,504	910	81,594	75,744	910	74,834	6,720	40	5,672,886
26	Oregon	9	6,630	4,960	1,670	3,122	1,452	1,670	2,910	598	642,410
27	Pennsylvania	1,509	1,965,568	1,604,753	360,815	1,673,537	1,321,981	351,556	38,573	253,458	417,598,630
28	Tennessee	142	661,507	548,247	113,260	458,924	353,954	104,970	128,540	74,043	20,329,066
29	Texas	47	130,063	108,132	21,931	125,774	104,513	21,261	80	4,209	5,894,898
30	Utah	22	27,541	27,341	200	17,341	17,221	120	4,600	5,600	5,856,501
31	Virginia	85	170,479	86,282	84,197	169,296	85,217	84,079	710	473	42,337,222
32	Washington	54	98,167	76,271	21,896	88,611	67,635	20,976	620	8,936	13,799,480
33	West Virginia	661	1,176,860	611,023	565,837	1,134,485	583,263	551,222	13,435	28,940	148,802,294
34	Wyoming	65	70,908	55,744	15,164	64,783	50,024	14,759	...	6,125	7,609,229
35	All other states [3]	8	46,520	46,520	...	17,520	17,520	...	...	29,000	1,014,823
	Producing bituminous mines without coke manufacture										
36	Alabama	167	241,651	169,597	72,054	231,765	160,261	71,504	1,790	8,096	19,632,647
37	Colorado	140	83,081	58,380	24,701	65,047	41,226	23,821	400	17,634	18,046,592
38	Kentucky	299	348,861	229,068	119,793	332,084	214,421	117,663	838	15,939	22,807,715
39	Pennsylvania	1,179	1,568,407	1,273,202	295,205	1,338,003	1,050,246	287,757	33,761	196,643	227,746,738
40	Tennessee	129	367,064	261,804	105,260	329,650	232,680	96,970	26,540	10,874	9,830,983
41	Virginia	44	36,263	12,418	23,845	35,190	11,353	23,837	600	473	21,846,844
42	Washington	51	92,269	74,931	17,338	83,313	66,295	17,018	620	8,336	13,040,936
43	West Virginia	479	596,979	236,585	360,394	565,457	215,401	350,056	11,353	20,169	77,677,068
	Producing bituminous mines with coke manufacture										
44	Alabama	36	534,593	532,193	2,400	367,494	365,094	2,400	125,000	42,099	39,969,749
45	Colorado	15	30,555	26,535	4,020	27,895	23,875	4,020	...	2,660	12,488,341
46	Kentucky	11	50,985	50,985	...	32,585	32,585	...	15,700	2,700	1,892,818
47	Pennsylvania	330	397,161	331,551	65,610	335,534	271,735	63,799	4,812	56,815	189,851,892
48	Tennessee	13	294,443	286,443	8,000	129,274	121,274	8,000	102,000	63,169	10,498,083
49	Virginia	41	134,216	73,864	60,352	134,106	73,864	60,242	110	...	20,490,378
50	Washington	3	5,898	1,340	4,558	5,298	1,340	3,958	...	600	758,544
51	West Virginia	182	579,881	374,438	205,443	569,028	367,862	201,166	2,082	8,771	71,125,226

---

[1] Exclusive of duplications due to the fact that anthracite operators reported 11,689 acres, both in acres owned and in acres held under lease, of which 10,975 acres were coal land and 714 acres were other land. See page 181, "Coal land controlled."

[2] The United States total includes $18,229,388 not distributed by states, due to the fact that several operators with bituminous mines in more than one state reported capital as a whole without segregating the investment for each state. The states affected are Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Montana, Oklahoma, Pennsylvania, Washington, West Virginia, and Wyoming.

[3] See Notes 5 and 7.

[4] The statistics of salaries for the United States include $897,857, salaries of officials, and $625,499, salaries of clerks, etc., employed in general offices; these amounts are not included in the statistics of salaries for the individual states, but are included under sundries in the expenses of the several states. Similarly for the United States the statistics of taxes include $172,937 and the statistics of contract work include $57,174, reported by general offices, which have been included for the several states, not under the heads of taxes and contract work, respectively, but under sundries. The states affected by these items of salaries, taxes, and contract work are the following: Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Ohio, Oklahoma, Pennsylvania, Texas, Washington, and West Virginia. See page 182. "Administrative expenses of general offices."

COAL MINES—GENERAL STATISTICS, BY STATES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT.												
	Aggregate.	Services.				Supplies.			Royalties.	Miscellaneous.			
		Total.	Salaries.		Wages.	Total.	Fuel and rent of power.	Other.		Total.	Taxes.	Contract work.	Rent of offices and sundries.
			Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.									
1	[3] $531,351,592	[4] $413,363,645	[4] $15,086,587	[4] $11,360,445	$386,916,613	[5] $74,934,946	$10,707,873	[5] $64,227,073	$20,067,727	[4] $27,877,543	[4] $7,178,698	[4] $4,126,847	[4] $16,571,798
2	[7] 134,895,699	97,084,561	2,324,374	2,269,090	92,491,097	26,759,485	3,195,789	23,563,696	7,981,639	7,782,283	2,685,633	1,702,865	3,373,785
3	[7] 244,145	183,598	7,151	3,009	173,438	61,519	2,563	58,956	900	17,484	3,756	1,351	12,377
4	[7] 134,451,554	96,900,963	2,317,223	2,266,081	92,317,659	26,697,966	3,193,226	23,504,740	7,980,739	7,744,799	2,681,877	1,701,514	3,361,408
5	[7] 134,245,600	96,742,395	2,311,003	2,261,486	92,169,906	26,662,088	3,189,279	23,472,809	7,969,785	7,736,176	2,677,853	1,701,514	3,356,809
6	[7] 205,954	158,568	6,220	4,595	147,753	35,878	3,947	31,931	10,954	8,623	4,024	....	4,599
7	[5] 396,655,893	[4] 316,279,084	[4] 12,762,213	[4] 9,091,356	294,425,518	[5] 48,175,461	7,512,084	[5] 40,663,377	12,086,066	[4] 20,115,260	[4] 4,493,285	[4] 2,423,982	[4] 13,198,013
8	748,867	281,701	37,795	14,878	229,028	166,814	2,137	164,677	3,600	296,752	11,449	214,310	70,993
9	[5] 395,907,026	[4] 315,997,383	[4] 12,724,418	[4] 9,076,477	294,196,488	[5] 48,008,647	7,509,947	[5] 40,498,700	12,082,466	[4] 19,818,508	[4] 4,481,816	[4] 2,209,672	[4] 13,127,020
10	[5] 16,868,435	12,270,925	687,371	560,841	11,022,713	[5] 2,348,650	585,984	[5] 1,762,666	224,829	2,024,031	139,448	751,384	1,133,199
11	3,630,526	[4] 2,924,194	[4] 109,071	[4] 56,996	2,758,127	362,212	89,981	272,231	163,896	[4] 180,224	[4] 10,250	[4] 26,511	[4] 143,463
12	[5] 14,279,495	[4] 11,096,066	[4] 413,970	[4] 298,330	10,383,766	[5] 2,167,167	303,980	[5] 1,863,187	430,136	[4] 586,126	[4] 133,126	[4] 9,139	[4] 443,861
13	51,697,504	[4] 44,074,914	[4] 1,324,355	[4] 759,313	41,991,246	4,944,371	1,005,253	3,939,118	744,860	[4] 1,933,359	[4] 171,582	[4] 51,480	[4] 1,710,297
14	14,906,831	[4] 12,877,655	[4] 381,914	[4] 222,197	12,273,544	1,198,974	214,621	984,353	240,494	[4] 589,708	[4] 83,230	[4] 10,674	[4] 495,804
15	12,816,076	[4] 10,851,841	[4] 280,146	[4] 188,023	10,383,672	1,330,436	125,214	1,205,222	322,673	[4] 311,126	[4] 38,484	[4] 38,266	[4] 234,376
16	9,778,297	[4] 8,393,193	[4] 154,291	[4] 132,232	8,106,670	609,521	100,975	508,546	266,645	[4] 509,038	[4] 18,394	[4] 49,793	[4] 440,851
17	10,171,949	[4] 7,943,284	[4] 523,880	[4] 266,042	7,153,362	1,196,120	173,453	1,024,667	325,239	[4] 705,306	[4] 67,946	[4] 86,660	[4] 550,700
18	3,941,359	[4] 2,935,410	[4] 111,261	[4] 110,855	2,713,294	408,227	35,719	372,508	95,757	[4] 501,965	[4] 79,726	[4] 1,653	[4] 420,586
19	2,985,802	2,392,412	87,445	37,695	2,267,272	325,517	30,266	295,251	61,556	206,318	14,439	2,203	189,676
20	5,715,727	[4] 4,905,202	[4] 148,745	[4] 60,485	4,695,972	397,068	75,688	321,380	160,182	[4] 253,276	[4] 6,911	[4] 23,903	[4] 222,461
21	4,584,674	3,695,048	117,661	97,493	3,479,894	665,804	125,967	539,837	96,151	127,671	33,718	415	93,538
22	3,275,025	2,704,421	97,588	147,436	2,459,397	358,489	29,850	328,639	6,712	205,403	27,071	7,521	170,811
23	523,410	417,290	32,752	27,317	357,221	75,187	12,835	62,352	10,647	20,286	4,265	1,325	14,696
24	27,153,497	[4] 22,289,075	[4] 911,606	[4] 455,430	20,922,039	2,681,281	388,466	2,292,815	892,398	[4] 1,290,743	[4] 234,021	[4] 52,854	[4] 1,003,868
25	6,535,441	[4] 5,105,722	[4] 187,087	[4] 115,243	4,803,392	912,614	166,630	745,984	269,651	[4] 247,454	[4] 36,589	[4] 22,266	[4] 188,599
26	238,246	164,559	6,050	5,664	152,845	62,590	43,067	19,523	438	10,659	2,642	2,000	6,017
27	[5] 128,161,063	[4] 99,861,056	[4] 3,517,425	[4] 2,647,494	93,696,137	[5] 17,317,225	2,302,679	[5] 15,014,546	3,996,568	[4] 6,986,214	[4] 2,344,575	[4] 787,163	[4] 3,854,476
28	[5] 6,859,204	5,400,104	329,796	232,105	4,838,203	[5] 713,984	100,792	[5] 613,192	404,429	340,687	48,704	6,036	285,947
29	2,812,079	[4] 2,303,146	[4] 115,072	[4] 62,031	2,126,043	334,867	41,603	293,264	36,247	[4] 137,819	[4] 12,340	[4] 21,214	[4] 104,265
30	3,217,579	2,524,073	118,347	77,426	2,328,300	603,920	110,661	493,259	2,169	87,417	55,183	2,500	29,734
31	5,286,920	3,587,503	202,349	180,385	3,204,769	789,082	230,282	558,800	251,824	658,511	117,232	114,453	426,826
32	6,533,164	[4] 5,286,890	[4] 132,530	[4] 113,910	5,040,450	862,697	195,163	667,534	103,330	[4] 280,247	[4] 85,484	[4] 10,162	[4] 184,601
33	45,469,759	[4] 34,000,488	[4] 1,596,534	[4] 1,408,251	30,995,703	5,845,954	707,151	5,138,803	2,870,850	[4] 2,752,467	[4] 485,161	[4] 62,279	[4] 2,205,027
34	8,146,526	[4] 6,219,817	[4] 230,615	[4] 180,954	5,808,248	1,435,465	307,831	1,127,634	104,908	[4] 386,336	[4] 55,969	[4] 10,644	[4] 319,723
35	318,438	249,739	8,700	6,830	234,209	59,225	5,836	53,389	....	9,474	2,389	....	7,085
36	7,806,117	5,966,251	415,349	264,560	5,286,342	1,140,858	255,130	885,728	210,008	489,000	58,959	93,439	336,602
37	9,394,037	[4] 7,364,973	[4] 342,409	[4] 190,757	6,831,807	1,234,149	197,334	1,036,815	332,219	[4] 462,696	[4] 65,889	[4] 9,139	[4] 387,668
38	9,140,144	[4] 7,144,573	[4] 479,019	[4] 242,562	6,422,992	984,049	136,842	847,207	325,239	[4] 686,283	[4] 57,083	[4] 86,660	[4] 542,540
39	79,351,941	[4] 62,311,534	[4] 1,972,404	[4] 1,683,853	58,655,277	10,057,493	1,517,684	8,539,809	3,209,038	[4] 3,773,876	[4] 1,301,289	[4] 393,320	[4] 2,079,267
40	5,185,588	4,055,674	260,401	183,805	3,611,468	500,909	69,897	431,012	399,649	229,356	35,285	6,036	188,035
41	1,628,096	1,194,785	82,481	41,876	1,070,428	125,973	30,664	95,309	99,364	207,974	55,787	114,453	37,734
42	6,205,090	[4] 5,017,095	[4] 115,160	[4] 107,823	4,794,112	824,851	190,205	634,646	90,993	[4] 272,151	[4] 81,339	[4] 10,162	[4] 180,650
43	24,327,363	[4] 18,194,203	[4] 1,009,940	[4] 700,682	16,483,581	3,200,654	379,157	2,821,497	1,575,439	[4] 1,357,067	[4] 213,655	[4] 58,123	[4] 1,085,269
44	[5] 9,062,318	6,304,674	272,022	296,281	5,736,371	[5] 1,207,792	330,854	[5] 876,938	14,821	1,535,031	80,489	657,945	796,597
45	[5] 4,885,458	3,731,093	71,561	107,573	3,551,959	[5] 933,018	106,646	[5] 826,372	97,917	123,430	67,237	....	56,193
46	1,031,805	798,711	44,861	23,480	730,370	214,071	36,611	177,460	....	19,023	10,863	....	8,160
47	[5] 48,809,122	37,549,522	1,545,021	963,641	35,040,860	[5] 7,259,732	784,995	[5] 6,474,737	787,630	3,212,338	1,043,286	393,843	1,775,209
48	[5] 1,673,616	1,344,430	69,395	48,300	1,226,735	[5] 213,075	30,895	[5] 182,180	4,780	111,331	13,419	....	97,912
49	3,658,824	2,392,718	119,868	138,509	2,134,341	663,109	199,618	463,491	152,460	450,537	61,445	....	389,092
50	328,074	289,795	17,370	6,087	246,338	37,846	4,958	32,888	12,337	8,096	4,145	....	3,951
51	21,142,396	15,806,285	586,594	707,569	14,512,122	2,645,300	327,994	2,317,306	1,295,411	1,395,400	271,506	4,156	1,119,738

---

[5] The totals for the United States include $433,801, cost of coal purchased for coking at mines, of which $128,176 are included in the statistics for Alabama, $261,475 in those for Colorado, $27,804 in those for Pennsylvania, and $16,346 in those for Tennessee.

[6] The total number of producing anthracite mines given for Pennsylvania includes 63 river dredges and 52 washeries.

[7] Gross expenses for all anthracite mines were $139,587,968, of which $263,501 were for nonproducing mines and $139,324,467 for producing mines; of this latter amount, $139,110,444 relates to Pennsylvania and $214,023 to Colorado and New Mexico. Deductions from the wages shown in the foregoing totals were made on account of explosives, oil, and blacksmithing, as follows: For all anthracite mines, $4,892,269, of which $19,356 were for nonproducing mines and $4,872,913 were for producing mines; of this latter amount the deductions for Pennsylvania were $4,864,844, and for Colorado and New Mexico $8,069.

[8] Includes California, Georgia, and Idaho.

COAL MINES—GENERAL STATISTICS, BY STATES: 1909.

Table 62—Continued.

	STATE.	PRODUCTS. Number of tons produced (2,000 pounds). Coal.							
		Total.	Loaded at mines for shipment, or used in other departments by producers.	Sold locally.	Used at mines for steam and heat.	Made into coke at mines.	Mined by machines. Quantity.	Mined by machines. Per cent.	Coke made at mines.
1	**UNITED STATES—All mines**	**457,833,640**	**[1] 378,254,214**	**11,514,926**	**17,991,697**	**[2] 50,072,603**			**32,450,482**
	ANTHRACITE								
2	**All mines**	**80,968,130**	**70,246,074**	**2,105,772**	**8,616,284**				
3	Nonproducing mines								
4	Producing mines	80,968,130	70,246,074	2,105,772	8,616,284				
5	Pennsylvania	80,881,106	70,161,446	2,105,772	8,613,888				
6	Colorado and New Mexico	87,024	84,628		2,396				
	BITUMINOUS								
7	**All mines**	**376,865,510**	**[1] 308,008,140**	**9,409,154**	**9,375,613**	**[2] 50,072,603**	**144,775,410**	**38.4**	**32,450,482**
8	Nonproducing mines								
	Producing mines:								
9	**United States**	**376,865,510**	**[1] 308,008,140**	**9,409,154**	**9,375,613**	**[2] 50,072,603**	**144,775,410**	**38.4**	**32,450,482**
10	Alabama	13,676,561	8,236,595	139,375	536,495	[2] 4,764,096	2,295,500	16.8	2,883,774
11	Arkansas	2,373,619	2,269,395	13,810	90,414		4,444	0.2	
12	Colorado	10,642,868	8,407,618	249,959	328,572	[2] 1,656,719	2,046,645	19.2	1,061,868
13	Illinois	50,570,503	46,602,733	2,508,463	1,459,307		18,140,591	35.9	
14	Indiana	14,723,231	13,484,475	803,871	434,885		7,450,091	50.6	
15	Iowa	7,725,679	6,834,088	679,579	212,012		8,414	0.1	
16	Kansas	6,895,660	6,575,258	174,067	146,335		54,976	0.8	
17	Kentucky	10,561,276	9,812,859	401,182	261,926	85,309	6,494,960	61.5	38,503
18	Maryland	4,001,272	3,915,794	36,493	48,985		117,568	2.9	
19	Michigan	1,772,315	1,611,182	91,057	70,076		628,211	35.4	
20	Missouri	3,596,691	3,237,360	293,160	66,171		798,878	22.2	
21	Montana	2,543,383	[5] 2,338,464	91,849	113,070	(6)	854,771	33.6	(6)
22	New Mexico	2,774,912	[5] 2,712,022	30,492	32,398	(6)	1,089,119	39.2	(6)
23	North Dakota	364,536	242,628	109,356	12,552		164,365	45.1	
24	Ohio	27,518,764	26,166,148	747,807	604,809		22,112,063	80.4	
25	Oklahoma	3,113,149	2,879,113	44,935	189,101		50,811	1.6	
26	Oregon	83,704	44,236	22,128	17,340		22,000	26.3	
27	Pennsylvania	137,304,760	98,472,107	2,097,098	2,959,862	[2] 33,775,693	57,574,954	41.9	22,499,706
28	Tennessee	5,972,930	5,399,092	79,568	98,978	[2] 395,292	1,024,398	17.2	213,759
29	Texas	1,824,742	1,770,504	6,330	47,908		17,230	0.9	
30	Utah	2,259,789	[5] 2,136,533	22,637	100,619	(6)			(6)
31	Virginia	4,949,341	2,802,693	50,232	183,433	1,912,983	1,439,811	29.1	1,264,213
32	Washington	3,601,213	3,331,087	56,828	143,590	69,708	48,690	1.4	42,980
33	West Virginia	51,495,666	43,817,088	582,420	927,729	6,168,429	20,945,819	40.7	3,809,028
34	Wyoming	6,294,596	5,941,776	68,324	284,496		1,391,101	22.1	
35	All other states[6]	224,350	[6] 211,666	8,134	4,550	[2] 1,244,374			[3] 636,651
	Producing bituminous mines without coke manufacture								
36	Alabama	6,515,922	6,142,266	116,763	256,893		1,151,808	17.7	
37	Colorado	6,994,756	6,536,517	235,697	222,542		2,046,645	29.3	
38	Kentucky	9,386,178	8,809,170	378,949	198,059		5,512,263	58.7	
39	Pennsylvania	85,103,949	81,604,471	1,690,930	1,808,548		46,873,329	55.1	
40	Tennessee	4,657,257	4,531,058	58,173	68,026		944,599	20.3	
41	Virginia	1,490,135	1,437,249	21,707	31,179		616,076	41.3	
42	Washington	3,496,242	3,300,078	56,236	139,928		48,690	1.4	
43	West Virginia	27,166,931	26,320,796	375,591	470,544		13,871,026	51.1	
	Producing bituminous mines with coke manufacture								
44	Alabama	7,160,639	2,094,329	22,612	279,602	[2] 4,764,096	1,143,692	16.0	2,883,774
45	Colorado	3,648,112	1,871,101	14,262	106,030	[2] 1,656,719			1,061,868
46	Kentucky	1,175,098	1,003,689	22,233	63,867	85,309	982,697	83.6	38,503
47	Pennsylvania	52,200,811	16,867,636	406,168	1,151,314	[2] 33,775,693	10,701,625	20.5	22,499,706
48	Tennessee	1,315,673	868,034	21,395	30,952	[2] 395,292	79,799	6.1	213,759
49	Virginia	3,459,206	1,365,444	28,525	152,254	1,912,983	823,735	23.8	1,264,213
50	Washington	104,971	31,009	592	3,662	69,708			42,980
51	West Virginia	24,328,735	17,496,292	206,829	457,185	6,168,429	7,074,793	29.1	3,809,028

---

[1] Exclusive of 1,244,374 tons of coal made into coke at mines, which are included in this column in the statistics for Georgia, Montana, New Mexico, and Utah, to avoid disclosing individual operations.

[2] The total for the United States excludes 418,225 tons of coal purchased for coking at mines, of which 102,487 tons are excluded from the total for Alabama, 262,789 tons from the total for Colorado, 36,684 tons from the total for Pennsylvania, and 16,265 from the total for Tennessee.

[3] Exclusive of $2,328,122, value of coke made at mines, which is included in this column in the statistics for Georgia, Montana, New Mexico, and Utah, to avoid disclosing individual operations.

[4] The total for the United States includes 1 water wheel of 4 horsepower in Kansas, 4 water wheels of 320 horsepower and 2 water motors of 14 horsepower in Washington, and 2 water wheels of 10 horsepower in West Virginia.

COAL MINES—GENERAL STATISTICS, BY STATES: 1909—Continued.

	PRODUCTS—continued.					POWER.										COKE OVENS AT MINES.	
	Value at mines.				Valuation of coal made into coke at mines (not charged to expense nor added to value of product).	Primary.							Secondary.		Number of mining machines.	Built.	Building.
	Total.	Coal (exclusive of coal made into coke).	Coke made at mines.	Other products.		Total horsepower.	Steam engines.		Gas engines.		Electric motors operated by purchased current.		Electric motors run by current generated by the mine operators.				
							Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.			
1	$577,142,935	[3]$509,232,811	$67,483,162	$426,962	$41,281,055	[4]1,908,708	19,373	1,878,555	374	3,101	872	26,704	10,872	375,626	13,585	86,379	1,403
2	149,180,471	149,180,471				678,698	7,601	676,516	25	772	32	1,410	1,152	46,088			
3						1,945	21	1,945									
4	149,180,471	149,180,471				676,753	7,580	674,571	25	772	32	1,410	1,152	46,088			
5	148,957,894	148,957,894				676,128	7,567	673,946	25	772	32	1,410	1,152	46,088			
6	222,577	222,577				625	13	625									
7	427,962,464	[3]360,052,340	67,483,162	426,962	41,281,055	[4]1,230,010	11,772	1,202,039	349	2,329	840	25,294	9,720	329,538	13,585	86,379	1,403
8						2,609	34	2,609					3	240			
9	427,962,464	[3]360,052,340	67,483,162	426,962	41,281,055	[4]1,227,401	11,738	1,199,430	349	2,329	840	25,294	9,717	329,298	13,585	86,379	1,403
10	18,459,433	10,777,476	7,670,711	11,246	5,396,802	64,084	503	53,334	10	87	15	663	366	11,584	300	8,607	
11	3,508,590	3,508,490		100		10,508	140	10,508					20	1,746	12		
12	15,782,197	12,483,536	3,296,590	2,071	1,620,732	34,085	404	32,132	2	7	52	1,946	281	9,816	259	3,281	
13	53,030,545	52,999,918		30,627		166,174	1,987	165,441	71	484	16	249	298	12,165	1,372	24	
14	15,018,123	14,984,616		33,507		45,910	577	45,739	19	91	4	80	187	7,476	672	10	
15	12,682,106	12,679,225		2,881		19,118	354	18,746	76	329	2	43	32	1,375	7		
16	9,835,614	9,835,567		47		[4]19,707	330	19,604	12	56	4	43	15	960	16		
17	10,003,481	9,921,441	80,633	1,407	17,637	44,314	563	43,230	10	49	34	1,035	354	11,736	907	374	
18	4,483,137	4,445,041		38,096		9,845	194	9,795	2	35	3	15	40	1,273	39		
19	3,175,102	3,175,102				7,912	94	7,900	2	12			47	2,162	115		
20	5,881,034	5,879,972		1,062		11,898	238	11,619	30	144	6	135	78	2,042	103		
21	5,117,444	[7]5,117,444	(6)		(6)	16,173	109	16,066	1	3	6	104	86	2,801	82		
22	3,984,660	[7]3,974,250	(6)	10,410	(6)	9,387	53	7,866	2	21	44	1,500	72	4,068	8	980	
23	563,212	563,212				2,025	37	2,014	2	11			26	565	20		
24	27,353,663	27,274,403		79,260		97,422	1,003	95,545	26	159	91	1,718	1,211	35,501	1,537	4	
25	6,185,078	6,184,420		658		26,316	277	25,881			9	435	31	1,700	34		
26	225,026	225,026				1,109	15	1,109					9	200	27		
27	147,466,417	103,315,679	43,937,062	213,676	26,197,001	404,654	2,993	393,371	50	541	308	10,742	3,617	115,195	5,725	49,510	1,227
28	6,688,454	6,102,769	585,685		445,746	16,075	153	16,027	9	48			103	4,054	191	1,457	
29	3,136,004	3,134,720		1,284		6,217	92	6,217							11		
30	4,111,987	[7]4,111,987	(6)		(6)	6,929	60	6,914			1	15	68	3,211	7	650	
31	4,988,328	2,776,965	2,211,363		1,559,220	16,630	128	16,451	2	9	9	170	296	9,775	112	5,130	50
32	9,226,793	8,986,189	240,604		153,518	[4]16,812	133	16,300	1	7	6	171	169	5,834	18	185	
33	46,929,592	39,797,027	7,132,392	173	4,546,867	[4]155,576	1,114	149,815	20	146	222	5,605	2,232	81,598	1,890	15,966	126
34	9,721,134	9,721,134				28,071	172	27,356	2	90	8	625	79	2,461	121		
35	405,310	[7]404,853	[9]2,328,122	457	[9]1,343,532	450	15	450								201	
36	8,125,811	8,114,565		11,246		18,776	228	18,719	5	57			50	1,999	182		
37	10,208,042	10,208,042				27,350	348	25,477	2	7	50	1,866	185	5,721	258		
38	9,006,946	9,005,539		1,407		38,409	503	37,325	10	49	34	1,035	330	10,016	783		
39	85,773,883	85,749,052		24,831		238,250	1,688	232,459	45	501	159	5,290	2,601	77,810	4,471		
40	5,130,791	5,130,791				11,580	111	11,537	7	43			78	3,314	167		
41	1,379,924	1,379,924				5,214	43	5,035	2	9	9	170	46	1,145	57		
42	8,915,528	8,915,528				[4]16,252	127	16,100	1	7	5	96	158	5,554	18		
43	23,330,421	23,330,248		173		[4]79,238	571	76,610	16	124	110	2,494	1,022	32,525	1,387		
44	10,333,622	2,662,911	7,670,711		5,396,802	35,308	277	34,615	5	30	15	663	316	9,585	118	8,607	
45	5,574,155	2,275,494	3,296,590	2,071	1,620,732	6,735	56	6,655			2	80	96	4,095	1	3,281	
46	996,535	915,902	80,633		17,637	5,905	60	5,905					24	1,720	124	374	
47	61,692,534	17,566,627	43,937,062	188,845	26,197,001	166,404	1,305	160,912	5	40	149	5,452	1,016	37,385	1,254	49,510	1,227
48	1,557,663	971,978	585,685		445,746	4,495	42	4,490	2	5			25	740	24	1,457	
49	3,608,404	1,397,041	2,211,363		1,559,220	11,416	85	11,416					250	8,630	55	5,130	50
50	311,265	70,661	240,604		153,518	[4]560	6	200			1	75	11	280		185	
51	23,599,171	16,466,779	7,132,392		4,546,867	76,338	543	73,205	4	22	112	3,111	1,210	49,073	503	15,966	126

---

[3] Includes coal made into coke at mines, to avoid disclosing individual operations.
[4] See "All other states."
[7] Includes value of coke made at mines, to avoid disclosing individual operations.
[8] Includes California, Georgia, and Idaho.
[9] Includes Montana, New Mexico, and Utah, to avoid disclosing individual operations.

COAL MINES—GENERAL STATISTICS, BY STATES: 1909—Continued.

Table 62—Continued.

	STATE.	PERSONS ENGAGED IN INDUSTRY.													
		Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.			Wage earners, December 15, or nearest representative day.				
			Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.	Total.	Male.	Female.	Total.	Engineers, firemen, and mechanics.			Miners and miners' helpers (all inside).
				Total.	Performing manual labor.							Total.	Outside.	Inside.	
1	**UNITED STATES—All mines**	[1]771,773	[1]12,991	**3,938**	**1,790**	[1]2,505	[1]6,550	[1]14,483	[1]13,373	[1]1,110	**744,299**	**42,191**	**34,230**	**7,961**	**467,685**
	ANTHRACITE.														
2	**All mines**	**178,331**	**1,321**	**188**	**72**	**171**	**962**	**3,185**	**3,127**	**58**	**173,825**	**12,287**	**9,767**	**2,520**	**83,337**
3	Nonproducing mines	327	6	......	......	......	6	......	......	......	321	15	15	......	181
4	Producing mines	178,004	1,315	188	72	171	956	3,185	3,127	58	173,504	12,272	9,752	2,520	83,156
5	Pennsylvania	177,753	1,310	188	72	171	951	3,180	3,122	58	173,263	12,248	9,728	2,520	83,030
6	Colorado and New Mexico	251	5	......	......	......	5	5	5	......	241	24	24	......	126
	BITUMINOUS.														
7	**All mines**	[1]593,442	[1]11,670	**3,748**	**1,718**	[1]2,334	[1]5,588	[1]11,298	[1]10,246	[1]1,052	**570,474**	**29,904**	**24,463**	**5,441**	**384,348**
8	Nonproducing mines	765	50	9	5	19	22	30	30	......	685	78	74	4	325
	Producing mines:														
9	**United States**	[1]592,677	[1]11,620	**3,739**	**1,713**	[1]2,315	[1]5,566	[1]11,268	[1]10,216	[1]1,052	**569,789**	**29,826**	**24,389**	**5,437**	**384,023**
10	Alabama	24,822	556	40	6	135	381	787	746	41	23,479	1,959	1,587	372	13,478
11	Arkansas	5,678	135	38	20	27	70	81	76	5	5,462	392	350	42	3,800
12	Colorado	16,166	417	165	10	73	179	288	256	32	15,461	966	770	196	9,647
13	Illinois	76,761	1,364	528	359	243	593	952	847	105	74,445	3,699	2,974	725	63,503
14	Indiana	23,109	458	202	110	99	157	294	246	48	22,357	1,017	933	84	17,129
15	Iowa	18,332	514	298	225	79	137	195	158	37	17,623	752	600	152	13,073
16	Kansas	13,374	401	283	152	40	78	182	155	27	12,791	512	387	125	9,972
17	Kentucky	20,632	637	118	39	173	246	440	400	40	19,655	997	857	140	14,614
18	Maryland	6,069	130	28	13	20	82	141	136	5	5,798	252	212	40	3,833
19	Michigan	3,782	154	104	70	17	33	56	41	15	3,572	209	186	23	2,796
20	Missouri	9,991	381	244	208	32	105	84	68	16	9,526	356	347	9	7,015
21	Montana	4,793	93	41	28	14	38	88	80	8	4,612	463	341	122	3,096
22	New Mexico	3,688	52	13	8	14	25	146	127	19	3,490	207	122	85	2,324
23	North Dakota	954	77	51	19	5	21	20	18	2	857	48	42	6	581
24	Ohio	46,046	993	421	203	201	371	648	551	97	44,405	1,946	1,690	256	33,155
25	Oklahoma	9,124	143	35	22	39	69	167	160	7	8,814	790	666	124	5,414
26	Oregon	271	14	9	9	1	4	6	6	......	251	28	13	15	196
27	Pennsylvania	190,602	2,996	808	183	475	1,713	3,198	2,883	315	184,408	8,083	6,549	1,534	123,059
28	Tennessee	11,729	235	20	9	78	137	340	325	15	11,154	534	377	157	7,348
29	Texas	4,416	79	8	......	22	49	103	95	8	4,234	234	202	32	3,192
30	Utah	3,263	60	5	......	18	27	53	48	5	3,160	330	255	75	1,941
31	Virginia	10,418	128	15	......	42	71	248	237	11	10,042	772	623	149	4,970
32	Washington	6,348	69	6	2	16	47	124	110	14	6,155	502	426	76	3,834
33	West Virginia	72,477	1,038	59	12	287	692	1,773	1,700	73	69,666	4,285	3,435	850	40,710
34	Wyoming	8,267	272	185	4	24	63	156	149	7	7,839	455	407	48	5,054
35	All other states [2]	562	22	15	2	3	4	7	6	1	533	38	38	......	289
	Producing bituminous mines without coke manufacture.														
36	Alabama	12,427	320	40	6	109	171	386	367	19	11,721	733	641	92	8,162
37	Colorado	10,942	381	165	10	65	151	193	168	25	10,368	595	535	60	6,972
38	Kentucky	18,869	517	118	39	170	229	417	380	37	17,935	872	746	126	13,177
39	Pennsylvania	119,972	1,971	724	179	338	911	1,927	1,687	240	116,074	5,229	3,887	1,342	87,778
40	Tennessee	8,931	191	20	9	69	102	270	258	12	8,470	418	304	114	5,850
41	Virginia	3,197	68	10	......	26	32	68	61	7	3,061	155	131	24	1,941
42	Washington	6,035	61	6	2	15	40	117	103	14	5,857	473	401	72	3,748
43	West Virginia	38,107	726	57	12	194	475	918	882	36	36,463	2,213	1,801	412	22,966
	Producing bituminous mines with coke manufacture.														
44	Alabama	12,395	236	......	......	26	210	401	379	22	11,758	1,226	946	280	5,316
45	Colorado	5,224	36	......	......	8	28	95	88	7	5,093	371	235	136	2,675
46	Kentucky	1,763	20	......	......	3	17	23	20	3	1,720	125	111	14	1,437
47	Pennsylvania	70,630	1,025	84	4	139	802	1,271	1,196	75	68,334	2,854	2,662	192	35,281
48	Tennessee	2,798	44	......	......	9	35	70	67	3	2,684	116	73	43	1,498
49	Virginia	7,221	60	5	......	16	39	180	176	4	6,981	617	492	125	3,029
50	Washington	313	8	......	......	1	7	7	7	......	298	29	25	4	86
51	West Virginia	34,370	312	2	......	93	217	855	818	37	33,203	2,072	1,634	438	17,744

---

[1] The United States totals include 592 male and 99 female clerks, 174 superintendents and managers, and 138 salaried officers of corporations employed in general offices who could not be distributed among the individual states; the states concerned are Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Montana, Ohio, Oklahoma, Pennsylvania, Texas, Washington, West Virginia, and Wyoming. See page 182, "Administrative expenses of general offices."

COAL MINES—GENERAL STATISTICS, BY STATES: 1909—Continued.

	PERSONS ENGAGED IN INDUSTRY—continued.																	
	Wage earners, December 15, or nearest representative day—Continued.						Wage earners employed 15th day of—											
	Other wage earners 16 years of age and over.			Boys under 16 years of age.			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	Total.	Outside.	Inside.	Total.	Out-side.	In-side.												
1	227,455	104,931	122,524	6,968	4,051	2,917	691,510	686,653	680,232	650,344	647,044	653,440	660,072	667,813	685,999	705,742	721,175	730,164
2	74,954	35,833	39,121	3,847	3,234	13	173,059	172,775	173,297	168,295	168,402	169,261	167,731	166,063	166,351	170,302	170,925	169,492
3	125	66	59				212	270	272	286	265	297	306	323	348	341	324	308
4	74,829	35,767	39,062	3,247	3,234	13	172,847	172,505	173,025	168,009	168,137	168,964	167,425	165,740	166,003	169,961	170,601	169,184
5	74,746	35,716	39,030	3,239	3,226	13	172,679	172,417	172,906	167,928	168,007	168,715	167,166	165,486	165,760	169,729	170,358	168,943
6	83	51	32	8	8		168	88	119	81	130	249	259	254	243	232	243	241
7	152,501	69,098	83,403	3,721	817	2,904	518,451	513,878	506,935	482,049	478,642	484,179	492,341	501,750	519,648	535,440	550,250	560,672
8	282	214	68				54	61	169	188	187	249	332	344	417	462	510	583
9	152,219	68,884	83,335	3,721	817	2,904	518,397	513,817	506,766	481,861	478,455	483,930	492,009	501,406	519,231	534,978	549,740	560,089
10	7,622	4,368	3,254	420	200	220	22,493	21,338	21,478	20,968	20,507	20,334	20,463	20,863	21,626	22,462	22,456	24,627
11	1,257	350	907	13	1	12	4,840	4,192	3,681	2,674	2,789	3,607	4,060	4,736	4,914	5,099	5,253	5,151
12	4,791	2,607	2,184	57	23	34	14,043	13,582	13,327	12,536	11,859	11,703	11,707	12,344	13,370	14,246	14,650	15,396
13	17,166	4,262	12,904	77	4	73	69,376	68,760	67,569	61,266	60,852	58,799	59,637	59,571	64,177	68,032	70,074	71,193
14	4,158	1,169	2,989	53		53	19,309	19,117	18,813	17,394	17,515	16,670	18,144	18,635	20,033	20,626	21,267	21,318
15	3,674	1,178	2,496	124	5	119	16,552	16,518	16,033	14,379	13,787	13,381	13,709	14,410	15,336	16,132	16,861	17,235
16	2,302	735	1,567	5	1	4	12,354	12,362	11,971	10,255	9,906	11,032	10,970	11,158	11,673	12,078	12,445	12,586
17	3,980	1,860	2,120	64	15	49	16,992	16,884	16,165	15,189	14,662	14,609	15,191	15,651	16,743	17,874	18,568	19,127
18	1,549	739	810	164	21	143	5,825	5,753	5,716	5,570	5,528	5,533	5,383	5,257	5,409	5,445	5,505	5,772
19	567	132	435				3,703	3,644	3,611	3,305	3,112	3,213	3,254	3,320	3,382	3,386	3,414	3,496
20	2,136	644	1,492	19		19	8,689	8,392	7,910	5,795	5,616	6,231	6,511	7,057	7,955	8,680	8,917	9,370
21	1,053	597	456				4,095	3,905	3,940	3,828	3,950	3,842	3,741	3,828	4,088	4,261	4,498	4,594
22	911	641	270	48	18	30	3,530	3,676	3,576	3,662	3,516	3,461	3,589	3,543	3,623	3,417	3,444	3,455
23	227	157	70	1		1	739	724	624	411	348	321	384	391	434	694	753	848
24	9,110	2,383	6,727	194	10	184	40,463	40,405	39,375	36,910	36,684	37,235	37,680	39,281	40,418	40,784	43,770	43,126
25	2,607	850	1,757	3		3	7,545	7,274	6,676	6,451	6,377	6,621	7,296	7,543	7,794	8,373	8,544	8,720
26	27	27					258	270	245	199	171	121	112	141	178	229	212	235
27	52,128	27,961	24,167	1,138	291	847	162,715	163,261	163,765	158,820	159,902	164,889	167,634	169,672	171,748	175,066	178,367	182,146
28	3,036	1,434	1,602	236	38	198	10,971	10,726	10,646	10,372	10,216	10,005	9,958	10,205	10,264	10,636	11,117	11,119
29	808	378	430				4,032	4,067	4,011	4,075	3,904	3,910	4,015	3,896	3,988	4,174	4,093	4,118
30	861	523	338	28	17	11	2,912	2,800	2,653	2,621	2,473	2,463	2,581	2,638	2,667	2,599	2,670	3,120
31	4,173	2,527	1,646	127	25	102	9,014	8,789	8,620	8,734	8,727	9,078	9,075	9,168	9,032	9,206	9,596	9,967
32	1,788	880	908	31	31		5,722	5,795	5,658	5,674	5,802	5,763	5,762	5,708	5,988	6,044	6,062	6,020
33	23,834	11,485	12,349	837	114	723	63,980	63,461	62,932	63,308	62,983	63,906	64,080	65,276	66,965	67,704	69.161	68,986
34	2,325	868	1,457	5	3	2	7,726	7,620	7,265	6,956	6,764	6,699	6,563	6,593	6,898	7,200	7,504	7,825
35	129	129		77		77	519	502	506	509	505	504	510	521	528	531	539	539
36	2,690	990	1,700	136	76	60	11,136	10,362	10,043	10,046	9,913	10,042	9,884	10,120	10,557	10,975	11,053	11,456
37	2,755	1,164	1,591	46	14	32	9,166	8,682	8,318	7,943	7,509	7,390	7,235	7,732	8,786	9,416	9,731	10,303
38	3,822	1,702	2,120	64	15	49	15,143	15,038	14,446	13,445	12,984	13,014	13,521	13,967	15,046	16,132	16,826	17,435
39	22,255	8,226	14,029	812	114	698	101,876	102,025	102,504	100,236	101,296	103,976	105,806	106,475	107,653	109,464	111,855	113,913
40	2,055	887	1,168	147	24	123	8,559	8,257	8,064	7,909	7,794	7,647	7,633	7,821	7,905	8,024	8,400	8,445
41	936	252	684	29	6	23	2,595	2,472	2,663	2,954	3,074	3,248	3,343	3,315	3,071	3,176	3,204	2,986
42	1,605	798	807	31	31		5,434	5,494	5,376	5,376	5,472	5,461	5,453	5,406	5,705	5,731	5,752	5,722
43	10,776	3,997	6,779	508	63	445	32,463	32,383	31,862	32,313	31,888	32,846	33,005	33,853	34,966	35,110	35,901	35,750
44	4,932	3,378	1,554	284	124	160	11,357	10,976	11,435	10,922	10,594	10,292	10,579	10,743	11,069	11,487	11.403	13,171
45	2,036	1,443	593	11	9	2	4,877	4,900	5,009	4,593	4,350	4,313	4,472	4,612	4,584	4,830	4,919	5,093
46	158	158					1,849	1,846	1,719	1,744	1,678	1,595	1,670	1,684	1,697	1,742	1,742	1,692
47	29,873	19,735	10,138	326	177	149	60,839	61,236	61,261	58,584	58,606	60,913	61,828	63,197	64,095	65,602	66,512	68,233
48	981	547	434	89	14	75	2,412	2,469	2,582	2,463	2,422	2,358	2,325	2,384	2,359	2,612	2,717	2,674
49	3,237	2,275	962	98	19	79	6,419	6,317	5,957	5,780	5,653	5,830	5,732	5,853	5,961	6,030	6,392	6,981
50	183	82	101				288	301	282	298	330	302	309	302	283	313	310	298
51	13,058	7,488	5,570	329	51	278	31,517	31,078	31,070	30,995	31,095	31,060	31,075	31,423	31,999	32,594	33,260	33,236

---

[1] Includes California, Georgia, and Idaho.

CHAPTER V.

IRON.

INTRODUCTION.

Definitions and explanations.—In order that the text and tables of this report may be entirely clear, the following definitions and explanations are presented:

Scope of census.—The statistics of iron mining relate to the United States exclusive of all outlying possessions. The Thirteenth Census did not extend to the Philippine Islands nor were iron mines reported from the other noncontiguous territory of the United States.

The census returns cover two general classes of operations: First, those which produced iron ore during the year 1909, and second, those which were in course of development during that year. In a few cases, however, where an operator controlled a number of mines, some of which were producing and some nonproducing, the expenses of development of the nonproducing mines have been included in the expenses of the producing enterprises.

Period covered.—The returns for the iron mines cover the calendar year 1909 or the business year which corresponded most nearly to that calendar year, with the exception of those mines which operated only a portion of the year.

Number of operators.—In determining the number of operators in the United States subsidiary companies have not been considered separate operators, but each holding or owning company, together with all its subsidiary concerns in any part of the United States, has been counted as one operator. In the statistics for districts or states, however, enterprises situated in different districts or states, though controlled by the same operator, were counted as separate operators.

Capital.—The operators were required to report the total amount of capital, both owned and borrowed, which they had invested in the business on the last day of the business year. However, the accuracy of the returns to this inquiry is open to question, owing to the fact that the valuation of mining properties contains an element of uncertainty inherent in the estimate of the value of the ore deposit. Again, a considerable proportion of the mining properties form a part of larger enterprises which combine mining with the manufacture of iron and steel, and the segregation of capital in such instances is often a matter of estimate with the operator.

Expenses.—The expenses reported include all direct expenses of operation and development. Interest payments are not included, nor has any allowance been made for depreciation.

Salaries.—The amount of salaries shown includes all payments to officers, superintendents, managers, and salaried employees in general offices, as well as the payments to salaried employees at the mines.

Wages.—The wages shown in the tables of this report represent the net earnings of the men. The census schedule called for the amount of net wages; that is, the amount remaining after deductions had been made from the gross earnings on account of blacksmithing, explosives, oil, etc., furnished by the operators, and also called for the amount of such deductions made. Deductions aggregating $1,207,772 were reported by the operators, and an examination of the returns, as well as correspondence with the operators in cases where there was doubt as to the method pursued, showed that the operators had deducted the charges in all cases where they had reported the same. Some operators who reported no charges to the men furnished all supplies free of charge. The amount expended for supplies of this nature, whether charged to the men or not, is included in the item of supplies and materials. In cases where the operator failed to include the same in supplies and materials the amount was ascertained by correspondence.

Supplies and materials.—This item covers all materials and supplies of every description, including fuel used for any purpose in connection with the operation or development of the iron mines. It includes the cost of the following materials: Lumber and timber used for repairs, mine supports, track ties, and all other purposes; iron and steel for blacksmithing; rails, frogs, sleepers, etc., for tracks and repairs; renewals and repairs of tools; explosives and oil used directly or sold to employees; water for boilers and other purposes; machinery, supplies; etc. It also includes freight (if any) paid on materials. The amount expended for fuel by iron mines in 1909 includes an insignificant amount paid for rent of power, which formed about 1 per cent of the total power used in 1909.

Miscellaneous expenses.—The figures for miscellaneous expenses include royalties and rent of mines, taxes, cost of contract work, rent of offices, use of patents, insurance, ordinary repairs to buildings and machinery, advertising, damages, traveling expenses, and all other sundry expenses.

Value of products.—The schedule called for the value of products at the mine. However, the value reported was probably not always the actual value which would have resulted from sales in the open market, since a considerable part of the output of iron mines was produced by operators affiliated with blast furnaces or other industrial enterprises, and the value reported by such operators may have been a matter of intercorporate accounting rather than an expression of market value. The value of products reported is that of the ore used and sold, and not the value of the ore actually mined. This value also includes the value of by-products, most of which was manganiferous ore.

Persons engaged in the industry.—The statistics of the number of operators, salaried employees, and wage earners are based on the returns for December 15, 1909, or the nearest representative day. The number of wage earners reported includes overseers performing work similar to that of men over whom they had charge, but foremen whose duties were wholly supervisory are included among salaried employees.

Primary horsepower.—The figures given under this heading represent the total primary power generated by steam engines, gas or gasoline engines, and water wheels owned by the operators. They are exclusive of a small quantity of rented electric power which was reported by two operators and amounted to but slightly over 1 per cent of the total power used. The horsepower of electric motors run by current generated by the primary power of the mine operators is not included, since this would obviously result in duplication.

GENERAL SUMMARY: 1909.

Producing mines—General summary, by districts.—The following summary presents, by districts, the principal statistics for producing iron mines in 1909. The Lake Superior district, which comprises Minnesota, Wisconsin, and Michigan, and the Southern district, which comprises Alabama, Georgia, and Tennessee, were the principal producing districts, the combined production of these two districts representing 91.9 per cent of the total tonnage of ore used by the operators in their own blast furnaces or sold in the market.

Table 1	PRODUCING IRON MINES: 1909			
	United States.	Lake Superior district.[1]	Southern district.[2]	Other states.[3]
Number of operators	[4] 176	38	47	95
Number of mines	483	195	116	172
Persons engaged in industry	55,176	35,886	8,629	10,661
Proprietors and firm members	76	....	15	61
Salaried employees	2,870	2,088	474	308
Wage earners	52,230	33,798	8,140	10,292
Primary horsepower owned	342,069	262,305	40,915	38,849
Capital	$300,735,917	$237,386,821	$28,475,259	$34,873,837
Expenses of operation and development	$74,071,830	$61,552,979	$5,762,991	$6,755,860
Services	$33,121,418	$25,236,687	$3,797,740	$4,086,991
Salaries	$3,389,962	$2,628,989	$428,043	$332,930
Wages	$29,731,456	$22,607,698	$3,369,697	$3,754,061
Supplies and materials	$17,229,717	$13,901,022	$1,355,956	$1,971,739
Royalties and rent of mines	$15,174,735	$14,784,131	$136,723	$253,881
Contract work	$2,698,842	$2,613,823	$5,700	$79,319
Taxes	$3,970,355	$3,818,377	$46,979	$104,999
Rent of offices and sundries	$1,876,763	$1,198,939	$418,893	$258,931
Iron ore:				
Gross production (long tons)	51,947,129	42,095,627	5,556,838	4,294,664
Production after concentration	51,717,920	42,095,627	5,556,838	4,065,455
Used and sold—				
Quantity (long tons)	50,521,208	41,242,374	5,181,605	4,097,229
Value (including by-products)	$106,947,082	$92,216,852	$6,085,508	$8,644,722
Average per operator:				
Number of mines	3	5	2	2
Salaried employees	16	55	10	3
Wage earners	297	889	173	108
Tons used and sold	287,052	1,085,326	110,247	43,129
Average per mine:				
Wage earners	108	173	70	60
Primary horsepower	708	1,345	353	226
Tons used and sold	104,599	211,499	44,669	23,821

[1] Embraces Michigan, Minnesota, and Wisconsin.

[2] Embraces Alabama, Georgia, and Tennessee.

[3] Embraces Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, Nevada, New Mexico, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

[4] The difference of four between the total number of operators for the United States and the sum of the numbers for the districts and "Other states," is due to the elimination of the duplication in the United States total of those operators who had mines in more than one district.

There were 176 operators of iron mines in the United States in 1909. Where a number of mining properties were controlled by a holding company and operated through subsidiary companies, this holding company, together with all its subsidiaries, was counted as one operator.

The number of iron mines in the United States in 1909 was 483. The number of persons engaged in the industry, December 15, 1909, or the nearest representative day, was 55,176, of whom 52,230 were wage earners. The expenses of operation and development were $74,071,830, of which the payments for salaries and wages constituted somewhat less than half. The production of iron ore in crude form was 51,947,129 tons, but some of the ore produced in New York (882,548 tons) was concentrated at the mines, and the net production for the country as a whole after this concentration was 51,717,920 tons. It has been found impossible to assign any value to the ore produced which was added to the stock at the mine or lake port. The quantity used by blast furnaces at the mines or shipped from the mines for use in affiliated blast furnaces at a distance or for sale was 50,521,208 tons, and its value at the mine was $106,539,574, besides which manganiferous ore and other by-products to the value of $407,508 were produced, making the total value of products $106,947,082.

It should be noted that in some later tables the gross production of iron ore is shown; in some, the production after concentration; and in some, the quantity used and sold. The differences in practice in this respect depend upon the purpose of each table, and, particularly in certain cases, are determined by the nature of the figures for previous censuses with which comparison must be made.

The predominance of the Lake Superior district in the iron-mining industry is shown conspicuously by Table 1. More than four-fifths of the ore used and sold in 1909 came from this district, and the value of this ore, including by-products, represented nearly seven-eighths of the total for the country.

An examination of Table 1 shows that the scale of production in the Lake Superior district was much larger than that in the Southern district or in "Other states." In the Lake Superior district the average number of salaried employees per operator was 55, while in the Southern district it was only 10 and in "Other states," only 3. In the Lake Superior district the average number of wage earners per operator was 889, as compared with 173 in the Southern district and 108 in the rest of the country. The average output (based on the ore used and sold) per operator in the three divisions shows a still greater contrast. In the Lake Superior district the average was nearly ten times as great as in the Southern district and more than twenty-five times as great as in all the other states taken together. The contrast between the districts in respect to the scale of operations was due only in part to greater concentration of ownership, the average number of mines per operator in the Lake Superior district being 5, whereas in the Southern district and in "Other states" it was 2. On the average, a mine in the Lake Superior district gave employment to more than twice as many wage earners as one in the Southern district and to nearly three times as many as one in "Other states," while the average production (amount used and sold) per mine in the Lake Superior district was nearly five times as great as that in the Southern district and nearly nine times as great as that in the rest of the country. In the Lake Superior district the use of mechanical power was also much more extensive than elsewhere, the average primary horsepower in that district being 1,345 per mine, in the Southern district 353, and in "Other states" 226.

Table 2 shows the output of iron ore in the United States and in the five iron-mining states, with a production in 1909 of more than 1,000,000 tons.

Table 2 STATE.	IRON ORE USED AND SOLD: 1909	
	Quantity (long tons).	Per cent of total.
United States	50,521,208	100.0
Minnesota	28,314,713	56.0
Michigan	11,924,995	23.6
Alabama	4,312,360	8.5
New York	1,024,173	2.0
Wisconsin	1,002,666	2.0
All other states	3,942,301	7.8

Producing and nonproducing enterprises.—A certain amount of development work is incidental to the operation of every mine. In the report for the operations of each mine were included the number of wage earners employed on development work, their wages, the cost of supplies and materials used, and other incidental expenses of such work. In addition to producing mines, there were some mines where development work only was carried on. Table 3 shows the relative importance of producing and nonproducing enterprises.

Table 3	IRON MINES: 1909		
	Total.	Producing enterprises.	Nonproducing enterprises.
Number of operators	191	176	[1]19
Land controlled, acres	1,343,634	1,313,214	30,420
Average per operator	7,035	7,461	1,601
Capital	$305,586,756	$300,735,917	$4,850,839
Expenses of operation and development	$74,934,131	$74,071,830	$862,301
Wage earners	52,983	52,230	753
Average per operator	277	297	40

[1] Includes 4 operators who also operated producing mines.

The preceding table shows that nonproducing mines operated as separate enterprises represented a very small part of the iron-mining industry. They were also much smaller than the producing properties. The average number of wage earners per operator was 297 for producing and only 40 for nonproducing enterprises.

PROGRESS OF THE INDUSTRY.

Summary for producing mines in the United States: 1879–1909.—Table 4 presents for producing iron mines, in the United States as a whole, all comparable statistics as reported at the Thirteenth and the three preceding censuses.

Table 4 CENSUS YEAR.	PRODUCING IRON MINES.									
	Salaries and wages.	Cost of supplies and materials.	Gross quantity of ore produced (long tons).	Total steam power (horsepower).	Per cent of increase over preceding census.				Average expenditure per ton for—	
					Salaries and wages.	Supplies.	Ore produced.	Steam power.	Salaries and wages.	Supplies and materials.
1909	$33,121,418	$17,229,717	51,947,129	[1]326,753	40.1	92.0	46.1	217.6	$0.64	$0.33
1902	23,641,599	8,973,168	35,567,410	[1]102,878	64.1	79.5	145.0	77.4	0.66	0.25
1889	14,409,151	4,998,988	14,518,041	[2]57,976	51.1	72.7	130.2	104.0	0.99	0.34
1879	9,538,117	2,894,011	[3]6,307,883	[2]28,422	....	....	.....	.....	1.51	0.46

[1] Horsepower of steam engines. [2] Horsepower of steam boilers.
[3] Exclusive of the production of irregular producers.

This table shows an exceedingly rapid increase in the iron-mining industry. The gross amount of ore produced was more than eight times as great in 1909 as in 1879, and the expenditure for salaries and wages about three and a half times as great. The production of ore more than doubled between 1879 and 1889, and again more than doubled between 1889 and 1902, while between 1902 and 1909 there was an increase of 46.1 per cent.

The amount expended per ton for services decreased greatly from 1879 to 1902, but remained practically stationary from 1902 to 1909. On the other hand, the cost per ton of supplies and materials decreased considerably between 1879 and 1902, but increased from $0.25 to $0.33 between 1902 and 1909. The increase in the average expenditure for supplies and materials was apparently due to the increased use of mechanical power, but, as the increase in the quantity of ore produced did not keep pace with this increased use of mechanical power, it is probable that the expenditure for services in 1909 represented compensation for a smaller amount of labor than in 1902, as is further shown by Table 12.

The increase in the use of mechanical power is the most conspicuous feature of the development of iron mining brought out by Table 4. The horsepower shown in Table 4 for 1879 and 1889 represents the rated power of steam boilers, while that reported for 1902 and 1909 represents the rated power of steam engines. It must be borne in mind that the power of a boiler is always greater than that of the engine to which it supplies steam. The rate of increase from 1889 to 1902 was, accordingly, greater than that indicated by Table 4.

The increase in the number of steam engines and their horsepower is shown in Table 5.

Table 5 STEAM ENGINES USED IN PRODUCING IRON MINES.

CENSUS YEAR.	Number of engines.			Horsepower.			Average horsepower per engine.
	Number.	Increase over preceding census.		Amount.	Increase over preceding census.		
		Number.	Per cent.		Amount.	Per cent.	
1909	3,563	2,431	214.8	326,753	233,875	217.6	92
1902	1,132	311	37.9	102,878	78,040	314.2	91
1879	821	....	....	24,838	....	....	30

The absolute and relative increases in the number and horsepower of steam engines during the 7 years from 1902 to 1909 were far greater than during the preceding 23 years.

The progress in the use of mechanical power since 1902 has manifested itself not only in the increased use of steam power but also in the utilization of new sources of power. At the special census of 1902 the use of gas engines and water wheels was negligible, while in the seven years from 1902 to 1909 there was considerable development of these sources of power, although even in 1909 they were still comparatively unimportant. Moreover, there was a marked increase in the utilization of electric motors as a means of applying primary power. Table 6 presents comparative statistics of mechanical power, classified according to character.

Table 6 PRODUCING IRON MINES.

	Census year.	Primary power.[1]				Electric motors run by current generated by enterprise using.
		All classes.	Steam engines.	Gas or gasoline engines.	Water wheels.	
Number	1909	3,620	3,563	27	[2] 30	326
	1902	1,154	1,132	11	11	35
Horsepower	1909	342,069	326,753	2,651	[2] 12,665	13,295
	1902	103,974	102,878	86	1,010	937
Per cent of increase	......	229.0	217.6	2,982.6	1,154.0	1,318.9
Average per engine, etc.	1909	....	92	98	422	41
	1902	....	91	8	92	27

[1] Exclusive of a small amount of rented electric power reported by two operators.

[2] Includes 1 water motor of 115 horsepower.

In 1902 one unit of horsepower was used for every 342 gross tons mined, as compared with one for every 152 gross tons mined in 1909, and during the seven years the horsepower per mine increased from 198 to 708. It must, however, be kept in mind, that the power actually used is less than the rated horsepower of engines and other motors. These figures, therefore, do not necessarily represent precisely the increase in the amount of power actually used. The table shows not only a great increase in the number of each class of power generators, but also a marked increase in the average horsepower of gas engines and water wheels. The utilization of water power was practically confined to the state of Michigan, while Pennsylvania and New York employed 92.8 per cent of the total power supplied by gas and gasoline engines. Michigan and Minnesota are the only states in which extensive use is made of electric motors.

The accuracy of the returns concerning capital made by the mine operators in reply to census inquiries is open to question. The valuation of a mining property contains an element of uncertainty inherent in the estimate of the value of the ore deposit. Moreover, a large proportion of the mining properties form part of larger enterprises which combine mining with the manufacture of iron and steel products, and the segregation of the capital for the mines is often a matter of estimate. It was deemed advisable at the special census of 1902 to omit the inquiry concerning capital, but this inquiry was required by law in 1909. A comparison of the capital with the quantities of ore produced, as reported for 1879, 1889, and 1909, is presented in Table 7. The ratio of capital reported to the quantity of ore produced declined from about $10 per ton in 1879 to about $8 per ton in 1889 and to about $6 per ton in 1909. It is worthy of note that in Minnesota the returns for capital, amounting to 58.1 per cent of the total for the United States, were considerably less than the assessed valuation of iron-mining properties. The total capital on December 31, 1909, or at the end of the business year corresponding most nearly to the calendar year 1909, was $174,863,000, although the assessed valuation of iron-mining properties in the state in 1909 was $200,593,578.[1]

Table 7 PRODUCING IRON MINES.

CENSUS YEAR.	Capital.	Gross quantity of ore mined (long tons).	Per cent of increase over preceding census.	
			Capital.	Ore mined.
1909	$300,735,917	51,947,129	174.0	257.8
1889	109,766,199	14,518,041	77.7	130.2
1879	61,782,287	6,307,883	....	....

There are no comparable statistics of the number of wage earners at different censuses. The number reported for 1879 was called the average number, but the method by which this average was obtained by different operators was not explained in the report for that census. For 1889 the average number reported was computed by dividing the sum of the numbers employed each month by the number of months during which the mine was in operation. The total for 1889 purported to include also wage earners employed by contractors and subcontractors, but as these figures were reported by operators who did not directly employ the men the returns could not have been accurate. At the special census of 1902 the sum of the average numbers reported for each month during which the mine was in operation was divided by 12 and the result taken to represent the average number employed throughout the year, while at the census of 1909 no attempt was made to obtain the average number for the year, the actual number employed on the 15th day of each month or the nearest representative day being ascertained. While it is therefore impossible to make comparisons between the absolute numbers for the different censuses, the distribution of the reported number of wage earners between those employed above ground and those employed below ground is affected in only comparatively slight degree by the change in the method of reporting the number of wage earners. The distribution at each census was as follows:

---

[1] Report of Minnesota Tax Commission, 1910.

Table 8

CENSUS YEAR.	PER CENT OF WAGE EARNERS IN PRODUCING MINES EMPLOYED—	
	Above ground.	Below ground.
1909	47.7	52.3
1902	40.6	59.4
1889	47.7	52.3
1879	54.0	46.0

The percentages relating to the employment in the mines of boys under the age of 16 are likewise fairly comparable. In 1879, 5.2 per cent of all wage earners in iron mines were boys under 16; in 1889, 2.2 per cent; in 1902, 1.3 per cent; and in 1909 only 0.9 per cent.

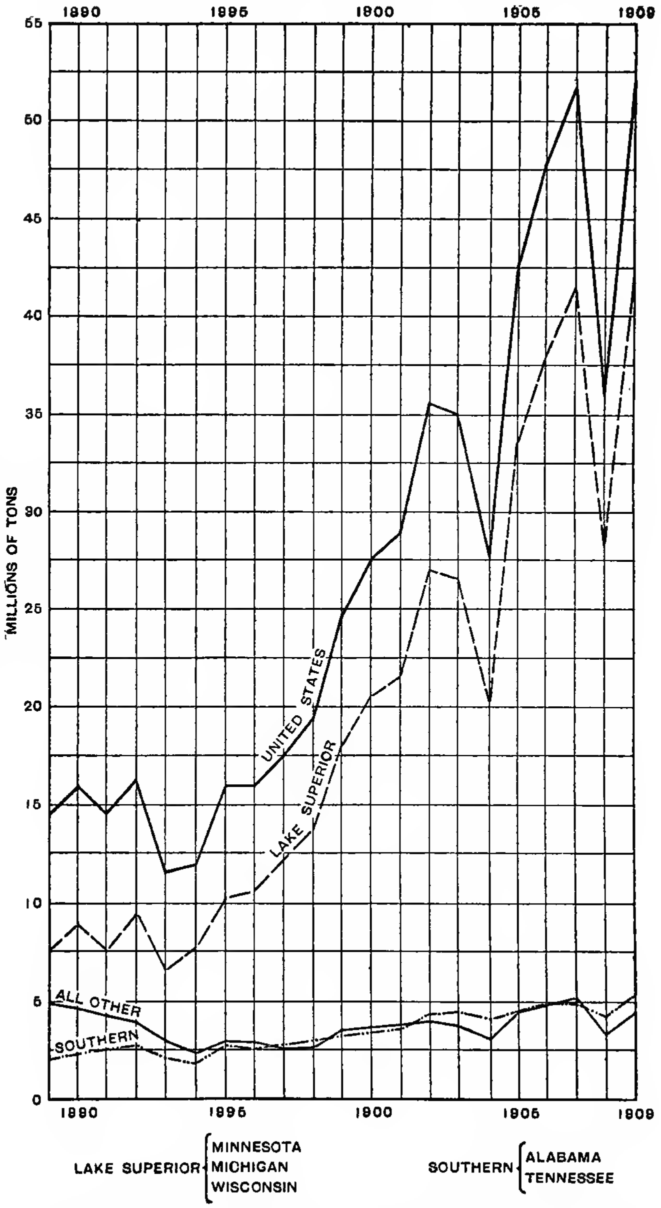
Comparison of ore production and pig-iron production, by five-year periods: 1890–1909.—As appears from Table 9, compiled from the annual reports of the United States Geological Survey,[1] the 20-year period between 1889 and 1909 witnessed the utilization of lower-grade ores. The percentage which the quantity of pig iron produced formed of the estimated consumption of iron ore shows a regular decline during each five-year period. As the great bulk of the ore consumed is domestic ore, this decline must be attributed to a change in the grade of such ore.

Table 9

PERIOD.	Domestic production of iron ore (long tons).	Apparent consumption of iron ore (long tons).	PIG IRON PRODUCED.		
			Quantity (long tons).	Per cent of—	
				Apparent consumption.	Domestic production.
1890–1894	70,391,195	71,028,506	40,421,463	56.9	57.4
1895–1899	93,597,998	96,571,074	53,116,752	55.0	56.7
1900–1904	154,658,413	156,423,984	81,995,188	52.4	53.0
1905–1909	229,274,087	229,224,029	115,812,421	50.5	50.5

Annual production of iron ore, by states: 1879–1909.—Table 10, compiled from the census reports and from the annual reports of the United States Geological Survey for intercensal years since 1889, shows the development of iron mining in the United States since 1879. The data presented in that table are shown graphically by Diagrams 1, 2, and 3. The curve shows the production of iron ore in the United States, in the Lake Superior and Southern districts, and in "All other states," from year to year. The bar diagram shows the growth of production of iron ore in the principal states by decennial periods from 1879 to 1909. The circle shows the comparative importance of the iron mining states in 1909.

Diagram 1.—Production of Iron Ore—United States and Principal Producing Regions: 1890–1909.



In 1879 Pennsylvania was the principal iron-mining state, and Michigan held second place, followed by New York and New Jersey; the industry in Alabama was in its infancy, and no iron mining was reported for Minnesota. The production of ore doubled during the decade 1879–1889, the increase being due chiefly to the development of the Lake Superior district, but partly to increased activity in the industry in Alabama and Tennessee. In 1889 Pennsylvania was outranked by Michigan and Alabama in the production of iron ore. In the 20-year period from 1889 to 1909 the production of iron ore increased from 14,500,000 to 52,000,000 tons, the increase being due primarily to the remarkable development of the industry in Minnesota and Michigan and to its continued development in Alabama. During this period Pennsylvania showed a decline of 57.3 per cent in its production of iron ore.

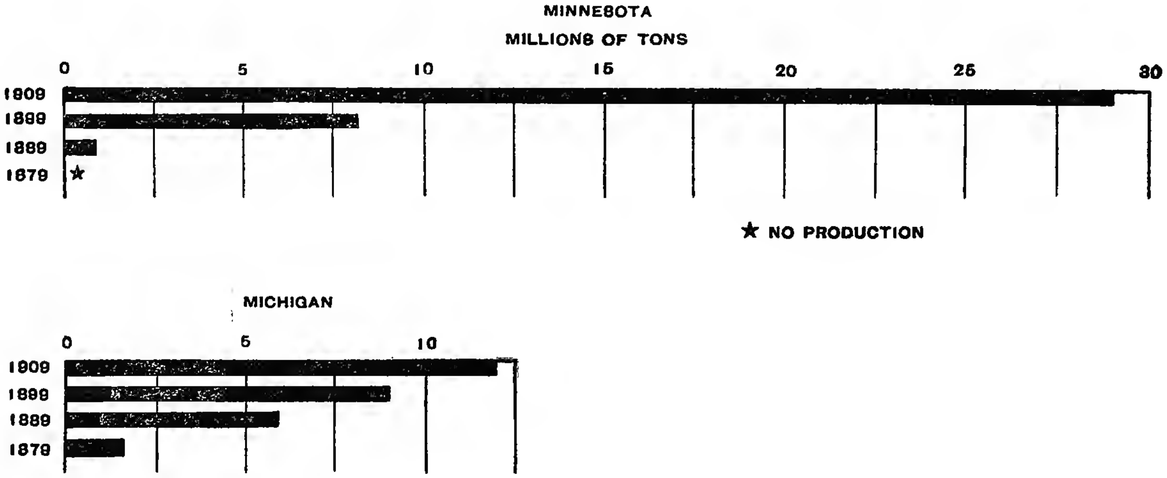
---

[1] Mineral Resources of the United States, 1909, Part I, p. 80.

Table 10

YEAR.	IRON ORE MINED (THOUSANDS OF TONS).									
	United States.	Minnesota.	Michigan.	Wisconsin.	Alabama.	Tennessee.	New York.	Pennsylvania.	New Jersey.	All other states.
1879	7,120	....	1,641	37	171	93	1,127	1,951	676	1,424
1889	14,518	865	5,856	837	1,670	473	1,248	1,560	416	1,693
1890	16,036	892	7,142	949	1,898	466	1,253	1,362	496	1,578
1891	14,591	945	6,127	589	1,987	544	1,017	1,273	526	1,583
1892	16,297	1,255	7,544	790	2,312	407	891	1,084	465	1,549
1893	11,588	1,500	4,668	439	1,742	373	534	698	356	1,278
1894	11,880	2,968	4,419	348	1,493	293	243	532	277	1,307
1895	15,958	3,866	6,812	649	2,199	520	307	900	282	1,423
1896	16,005	4,284	5,707	607	2,042	535	385	748	265	1,432
1897	17,518	6,601	6,087	554	2,099	604	336	724	254	1,259
1898	19,434	5,964	7,347	510	2,402	593	180	773	275	1,390
1899	24,683	8,161	9,146	580	2,663	632	444	1,009	256	1,792
1900	27,553	9,834	9,927	746	2,759	594	441	878	344	2,030
1901	28,887	11,110	9,654	739	2,802	789	420	1,041	402	1,930
1902	35,567	15,138	11,135	784	3,674	875	555	823	442	2,241
1903	35,019	15,371	10,600	675	3,685	853	540	645	485	2,165
1904	27,644	12,729	7,090	483	3,700	501	842	397	500	1,402
1905	42,526	21,735	10,886	859	3,783	735	1,140	809	526	2,053
1906	47,750	25,364	11,823	848	3,995	871	1,042	949	543	2,315
1907	51,721	28,970	11,830	839	4,039	814	1,375	837	550	2,467
1908	35,983	18,652	8,839	734	3,734	635	697	443	395	1,854
1909	51,947	29,128	11,993	975	4,687	649	1,239	666	537	2,073

DIAGRAM 2.—PRODUCTION OF IRON ORE, BY PRINCIPAL STATES: 1909, 1899, 1889, AND 1879.



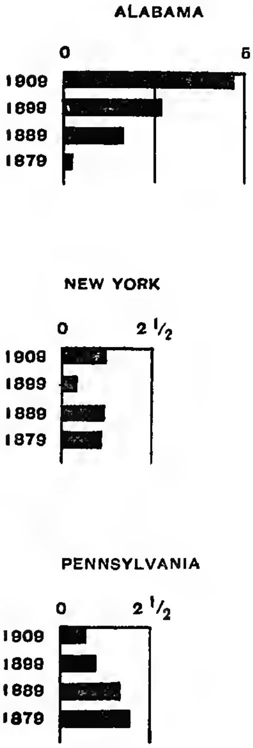
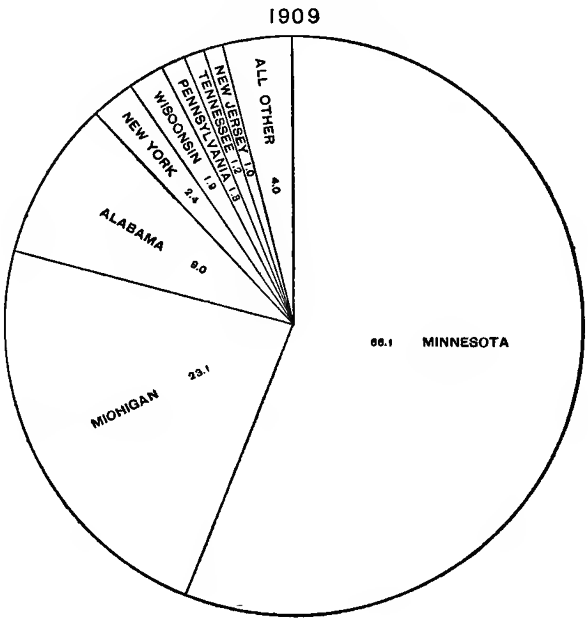


DIAGRAM 3.—PER CENT OF PRODUCTION OF IRON ORE, BY STATES: 1909.



Average expenses per ton, by states: 1879–1909.—Table 11 presents, for the United States and the principal iron-mining states, the average expenses for services and for supplies and materials per long ton of ore mined (gross).

Table 11	PRODUCING IRON MINES.							
STATE.	Average expense for salaries and wages per long ton of ore.				Average cost of supplies and materials per long ton of ore.			
	1909	**1902**	**1889**	**1879**	**1909**	**1902**	**1889**	**1879**
United States	**$0.64**	**$0.66**	**$0.99**	**$1.51**	**$0.33**	**$0.25**	**$0.34**	**$0.46**
Alabama	0.64	0.62	0.66	0.75	0.23	0.17	0.08	0.11
Michigan	0.98	0.89	1.08	1.57	0.41	0.33	0.41	0.57
Minnesota	0.43	0.38	1.13	......	0.29	0.18	0.48	......
Missouri	1.26	1.09	1.07	1.21	0.29	0.39	0.17	0.30
New York	0.92	0.90	0.87	1.37	0.61	0.53	0.46	0.48
Pennsylvania	0.28	0.62	0.73	1.34	0.17	0.20	0.19	0.32
Tennessee	0.90	0.67	0.75	1.04	0.28	0.17	0.18	0.11
Virginia	1.07	1.09	[1] 1.12	1.23	0.39	0.21	[1] 0.25	0.25

[1] Includes West Virginia.

The average expense for salaries and wages per ton of ore mined shows a decrease from 1879 to 1902 in each of the principal iron-mining states (excluding Minnesota), and an increase between 1902 and 1909 for all states named except Pennsylvania and Virginia. The decrease in the average for the United States as a whole between 1902 and 1909, notwithstanding increases in most individual states, was due to changes in the relative importance of the states in the production of ore. The cost of supplies and materials per ton varied considerably from census to census. From 1902 to 1909, however, all the states named except Missouri and Pennsylvania show a marked increase. As previously stated, the increased expense per ton for supplies and materials is directly related to the increased use of mechanical power.

The fact that there was between 1902 and 1909 an increase in the average expense per ton for salaries and wages in most states, despite the increased use of mechanical power, suggests that the saving in the amount of labor resulting from the increased use of machinery must have been attended by an increase in the rates of compensation. It is possible, however, that the increase in this average, as well as in the average cost of supplies and materials per ton, was due partly to an unusually large amount of development work done by the producing mines in 1909.

The state of Pennsylvania presents peculiar conditions. The unusually low expense per ton for salaries and wages, as well as for supplies and materials, shown by the census of 1909, was due to the predominance of open-pit mining in that state, as will be brought out later in this report.

Comparative summary for producing mines, by districts and states: 1909 and 1902.—Table 12 gives, by states, more detailed comparative data for 1909 and 1902 than have been presented in preceding tables.

The item of "all other" expenses shows a greater relative increase between 1902 and 1909 than any other except that of payments for contract work. In reality, the increase in this class of expenses was still greater than is shown in Table 12, because of the fact that the figures for 1902 include interest on bonds amounting to the sum of $521,111, as well as interest on other forms of indebtedness, the amount of which was not specified, while in 1909 interest was not included among the expenses reported. If the interest on bonds be deducted from the figures shown for 1902, the increase in this item from 1902 to 1909 becomes 374.3 per cent. The principal item among these expenses in 1909 was taxes, amounting to $3,970,355. These consisted largely of payments on holdings of land, only a portion of which were under actual operation. (See also pages 244 and 245.)

The total reported expenses show an increase of 79.4 per cent between 1902 and 1909, while the quantity of ore mined increased only 46.1 per cent. The value of ore mined increased 67.9 per cent during the same period. The value of ore mined, however, for 1909 was estimated from the average value at the mine of the ore sold and used.

Notwithstanding the introduction of labor-saving devices, as indicated by the great increase in horsepower, the cost of mining apparently increased considerably. As already stated, this may perhaps be accounted for by unusually large expenditures for development work in 1909.

COMPARATIVE STATISTICS FOR PRODUCING IRON MINES IN THE UNITED STATES, BY DISTRICTS AND STATES: 1909 AND 1902.

Table 12

DISTRICT AND STATE.	Census year.	Number of mines.	EXPENSES OF OPERATION AND DEVELOPMENT.						PRODUCTS.		Primary horsepower owned.
			Total.	Salaries and wages.	Supplies and materials.	Royalties and rent of mines.	Contract work.	All other.[1]	Ore mined (long tons).	Value.[2]	
United States [3]	1909	483	$74,071,830	$33,121,419	$17,229,717	$15,174,735	$2,699,842	$5,847,118	[4] 51,947,129	$109,881,000	343,069
	1902	524	$41,294,525	$23,641,599	$8,973,188	$6,503,908	$422,044	$1,753,806	35,567,410	$65,460,885	103,874
Per cent of increase [5]	...	—7.8	79.4	40.1	92.0	133.3	539.5	233.4	46.1	67.8	229.0
LAKE SUPERIOR DISTRICT	1909	195	$61,552,979	$25,236,687	$13,901,022	$14,784,131	$2,613,823	$5,017,316	42,095,627	$94,104,000	262,306
	1902	155	$31,160,230	$16,639,527	$6,736,268	$6,084,857	$398,376	$1,301,202	27,056,861	$52,485,951	68,873
Per cent of increase	...	25.8	97.5	51.7	106.4	143.0	556.1	285.6	55.6	79.3	280.9
Michigan	1909	83	$22,459,011	$11,764,957	$4,909,979	$3,827,852	$436,148	$1,520,075	11,992,693	$32,380,000	108,262
	1902	80	$16,631,637	$9,908,677	$3,661,194	$2,254,864	$57,382	$749,520	11,135,215	$26,695,860	39,101
Per cent of increase	...	3.8	35.0	18.7	34.1	69.8	660.1	102.8	7.7	21.3	176.9
Minnesota	1909	101	$37,295,373	$12,530,232	$8,548,861	$10,686,407	$2,157,075	$3,372,798	29,127,918	$58,838,000	145,068
	1902	59	$12,979,812	$5,807,927	$2,699,115	$3,648,750	$338,244	$485,776	15,137,650	$23,989,227	23,938
Per cent of increase	...	71.2	187.3	115.7	216.7	192.9	537.7	594.3	92.4	145.3	506.0
Wisconsin	1909	11	$1,798,595	$941,498	$442,182	$269,872	$20,600	$124,443	975,016	$2,886,000	8,975
	1902	16	$1,548,781	$922,923	$375,959	$181,243	$2,750	$65,906	783,996	$1,800,864	5,834
Per cent of increase [5]	...	—31.2	16.1	2.0	17.6	48.9	649.1	88.8	24.4	60.3	53.8
SOUTHERN DISTRICT	1909	116	$5,762,991	$3,797,740	$1,356,956	$136,723	$5,700	$465,872	5,556,828	$6,540,000	40,916
	1902	100	$4,152,726	$3,073,984	$801,758	$139,961	$500	$136,523	4,779,570	$5,513,056	11,731
Per cent of increase [5]	...	16.0	38.8	23.5	69.2	—2.3	1,040.0	241.2	16.3	18.6	248.8
Alabama	1909	52	$4,624,284	$3,022,435	$1,100,591	$90,190	$5,700	$405,368	4,687,468	$5,391,000	31,838
	1902	59	$2,899,042	$2,218,248	$592,286	$37,938	$500	$50,070	3,574,474	$3,936,812	7,440
Per cent of increase [5]	...	—11.9	59.5	36.3	85.8	137.7	1,040.0	709.6	31.1	36.9	327.9
Georgia	1909	18	$304,529	$191,428	$75,190	$18,468	...	$19,443	219,976	$331,000	3,496
	1902	19	$413,053	$271,499	$64,932	$8,351	...	$68,271	330,554	$452,717	2,521
Per cent of increase [5]	...	—5.2	—26.3	—29.5	15.8	121.1	...	—71.5	—33.5	—26.9	38.7
Tennessee	1909	46	$834,178	$583,877	$181,175	$28,065	...	$41,061	649,394	$818,000	5,681
	1902	22	$840,631	$584,237	$144,540	$93,672	...	$18,182	874,542	$1,123,527	1,770
Per cent of increase [5]	...	109.1	—0.8	—0.1	25.3	—70.0	...	125.8	—25.7	—27.2	216.3
OTHER STATES	1909	172	$6,755,860	$4,086,991	$1,971,739	$253,881	$79,319	$363,930	[4] 4,294,664	$9,237,000	38,849
	1902	269	$5,981,569	$3,928,088	$1,435,142	$279,090	$23,168	$316,081	3,730,979	$7,461,978	23,370
Per cent of increase [5]	...	—36.1	12.9	4.0	37.4	—9.0	242.4	15.1	15.1	23.8	66.2
Maryland	1909	13	$41,106	$28,319	$8,503	$1,343	$395	$2,546	22,704	$44,500	391
	1902	29	$39,212	$24,259	$2,639	$2,271	...	$10,043	24,367	$46,911	315
Per cent of increase [5]	...	—55.2	4.8	16.7	222.2	—40.9	...	—74.6	—6.8	—5.1	24.1
Missouri	1909	33	$150,836	$109,904	$25,191	$12,033	$1,099	$2,609	87,079	$204,000	403
	1902	34	$102,166	$72,241	$26,052	$2,538	$500	$835	66,308	$106,379	535
Per cent of increase [5]	...	—2.9	47.6	52.1	—3.3	374.1	119.8	212.4	31.3	91.8	—24.7
New Jersey	1909	10	$1,321,915	$907,016	$368,075	$7,091	...	$39,733	536,958	$1,584,000	6,585
	1902	15	$1,345,271	$875,156	$429,231	$7,915	$10,770	$22,199	441,879	$1,228,664	6,584
Per cent of increase [6]	...	—33.3	—1.7	3.6	—14.2	—10.4	...	79.0	21.5	28.9	(6)
New York	1909	19	$2,118,267	$1,140,235	$756,814	$62,668	$20,632	$137,918	[4] 1,238,720	$3,741,000	18,220
	1902	15	$990,807	$497,270	$293,950	$12,385	...	$187,202	555,321	$1,362,987	5,930
Per cent of increase [5]	...	26.7	113.8	129.3	157.5	406.0	...	—26.3	123.1	174.5	207.3
Ohio	1909	4	$22,701	$12,830	$3,225	$176	$5,254	$1,216	13,468	$24,500	...
	1902	12	$42,839	$40,938	$345	$1,503	...	$53	22,657	$41,976	50
Per cent of increase [6]	...	—66.7	—47.0	—68.7	834.8	—88.3	...	2,194.3	—40.6	—41.6	—100.0
Pennsylvania	1909	19	$377,583	$189,282	$110,800	$3,084	$50,994	$23,423	665,642	$792,000	3,971
	1902	47	$740,021	$510,995	$166,422	$26,343	$1,228	$35,033	822,932	$1,225,453	3,760
Per cent of increase [5]	...	—59.6	—49.0	—63.0	—33.4	—88.3	4,052.6	—33.1	—19.1	—35.4	5.6
Virginia	1909	58	$1,511,243	$900,756	$325,242	$148,130	$945	$136,170	841,709	$1,692,000	6,458
	1902	62	$1,391,711	$1,062,992	$201,426	$93,429	$6,730	$27,134	973,301	$1,652,799	4,378
Per cent of increase [5]	...	—6.5	8.6	—15.3	61.5	58.5	—86.0	401.8	—13.5	2.4	47.5
All other [7]	1909	16	$1,212,209	$798,649	$373,889	$19,356	...	$20,315	888,384	$1,155,000	2,821
	1902	55	$1,329,542	$844,237	$315,077	$132,706	$3,940	$33,582	824,214	$1,796,809	1,818
Per cent of increase [6]	...	—70.9	—8.8	—5.4	18.7	—85.4	...	—39.5	7.8	—35.7	55.2

---

[1] Includes interest for 1902, of which $521,111 was interest paid on bonds.
[2] The value of ore mined for 1909 has been estimated from the average value per ton at the mine of ore used and sold.
[3] Exclusive of governmental institutions.
[4] Of this ore, 882,548 tons were concentrated at the mines, from which 653,339 tons of concentrate were derived.
[5] A minus sign (—) denotes decrease.
[6] Less than one-tenth of 1 per cent.
[7] Embraces Colorado, Connecticut, Kentucky, Massachusetts, Nevada, New Mexico, North Carolina, Texas, Utah, West Virginia, and Wyoming in 1909, and Colorado, Connecticut, Kentucky, Massachusetts, Montana, New Mexico, North Carolina, Texas, Utah, Vermont, West Virginia, and Wyoming in 1902.

In Table 13 the items of expense shown in Table 12 are reduced to averages per ton of iron ore mined.

Table 13

DISTRICT AND STATE.	Census year.	PRODUCING IRON MINES. Average expense per ton mined. Total.	Salaries and wages.	Supplies and materials.	Royalties and rent of mines.	Contract work.	All other.	Average value per ton of ore at mine.[1]
United States	1909	$1.43	$0.64	$0.33	$0.29	$0.06	$0.11	$2.12
	1902	1.16	0.66	0.25	0.18	0.01	0.05	1.84
Increase[2]	......	0.27	−0.02	0.08	0.11	0.04	0.06	0.28
LAKE SUPERIOR DIST.	1909	1.46	0.60	0.33	0.35	0.06	0.12	2.24
	1902	1.15	0.61	0.25	0.22	0.01	0.05	1.94
Increase[2]	......	0.31	−0.01	0.08	0.13	0.05	0.07	0.30
Michigan	1909	1.87	0.98	0.41	0.32	0.04	0.13	2.70
	1902	1.49	0.89	0.33	0.20	0.01	0.07	2.40
Increase	......	0.38	0.09	0.08	0.12	0.03	0.06	0.30
Minnesota	1909	1.28	0.43	0.29	0.37	0.07	0.12	2.02
	1902	0.86	0.38	0.18	0.24	0.02	0.03	1.58
Increase	......	0.42	0.05	0.11	0.13	0.05	0.09	0.44
Wisconsin	1909	1.84	0.97	0.45	0.28	0.02	0.13	2.96
	1902	1.98	1.18	0.48	0.23	(3)	0.08	2.30
Increase[2]	......	−0.14	−0.21	−0.03	0.05	0.02	0.05	0.66
SOUTHERN DISTRICT	1909	1.04	0.68	0.24	0.02	(3)	0.08	1.17
	1902	0.87	0.64	0.17	0.03	(3)	0.03	1.15
Increase[2]	......	0.17	0.04	0.07	−0.01	......	0.05	0.02
Alabama	1909	0.99	0.65	0.23	0.02	(3)	0.09	1.15
	1902	0.81	0.62	0.17	0.01	(3)	0.01	1.10
Increase	......	0.18	0.03	0.06	0.01	......	0.08	0.05
Georgia	1909	1.38	0.87	0.34	0.08	......	0.08	1.51
	1902	1.25	0.82	0.20	0.03	......	0.21	1.37
Increase[2]	......	0.13	0.05	0.14	0.05	......	−0.13	0.14
Tennessee	1909	1.28	0.90	0.28	0.04	......	0.06	1.26
	1902	0.96	0.67	0.17	0.11	......	0.02	1.28
Increase[2]	......	0.32	0.23	0.11	−0.07	......	0.04	−0.02
OTHER STATES[4]	1909	1.57	0.95	0.46	0.06	0.02	0.08	2.11
	1902	1.60	1.05	0.38	0.07	0.01	0.08	2.00
Increase[2]	......	−0.03	−0.10	0.08	−0.01	0.01	......	0.11
Maryland	1909	1.81	1.25	0.37	0.06	0.02	0.11	1.96
	1902	1.61	1.00	0.11	0.09	......	0.41	1.93
Increase[2]	......	0.20	0.25	0.26	−0.03	0.02	−0.30	0.03
Missouri	1909	1.73	1.26	0.29	0.14	0.01	0.03	2.34
	1902	1.54	1.09	0.39	0.04	0.01	0.01	1.60
Increase[2]	......	0.19	0.17	−0.10	0.10	......	0.02	0.74
New Jersey	1909	2.46	1.69	0.69	0.01	......	0.07	2.95
	1902	3.04	1.98	0.97	0.02	0.02	0.05	2.78
Increase[2]	......	−0.58	−0.29	−0.28	−0.01	−0.02	0.02	0.17
New York	1909	1.71	0.92	0.61	0.05	0.02	0.11	3.02
	1902	1.78	0.90	0.53	0.02	......	0.34	2.45
Increase[2]	......	−0.07	0.02	0.08	0.03	0.02	−0.23	0.57
Ohio	1909	1.69	0.95	0.24	0.01	0.39	0.09	1.81
	1902	1.89	1.81	0.02	0.07	......	(3)	1.85
Increase[2]	......	−0.20	−0.86	0.22	−0.06	0.39	0.09	−0.04
Pennsylvania	1909	0.57	0.28	0.17	(3)	0.08	0.04	1.19
	1902	0.90	0.62	0.20	0.03	(3)	0.04	1.49
Increase[2]	......	−0.33	−0.34	−0.03	−0.03	0.08	......	−0.30
Virginia	1909	1.80	1.07	0.39	0.18	(3)	0.16	2.01
	1902	1.43	1.09	0.21	0.10	0.01	0.03	1.70
Increase[2]	......	0.37	−0.02	0.18	0.08	−0.01	0.13	0.31

[1] The 1909 averages are based on the quantity of ore used and sold (see Table 50) while the 1902 averages are obtained from the quantity of ore mined as shown by Table 12. The two sets of averages are, however, sufficiently comparable for all practical purposes.

[2] A minus sign (−) denotes decrease.

[3] Less than 1 cent.

[4] Embraces, in addition to the states shown separately below, Colorado, Connecticut, Kentucky, Massachusetts, Nevada, New Mexico, North Carolina, Texas, Utah, West Virginia, and Wyoming in 1909, and Colorado, Connecticut, Kentucky, Massachusetts, Montana, New Mexico, North Carolina, Texas, Utah, Vermont, West Virginia, and Wyoming in 1902.

Attention has already been called in connection with Table 11 to the changes which took place between 1902 and 1909 in the average expenses per ton for salaries and wages and for supplies and materials. The present table shows that in the United States as a whole the total reported expense increased from $1.16 per ton in 1902 to $1.43 per ton in 1909, notwithstanding the fact that the expenses for 1902 included interest, which was excluded in 1909. Increases appear in all of the items except the average expense for salaries and wages, which decreased in the United States as a whole, although increasing in most of the individual states. The average expenditure per ton for royalties and rent of mines (based on total tonnage, including that not produced under royalty) increased from $0.18 to $0.29, that for contract work from $0.01 to $0.05, and that for other miscellaneous objects from $0.05 to $0.11. Decreases are shown in one or more items for most of the states, the most important decreases, among the states with any considerable production, being in Wisconsin, New Jersey, and Pennsylvania, although in each of these states there was an increase in the average for one or more classes of expenses.

In the United States as a whole the average value of ore per ton at the mine increased from $1.84 in 1902 to $2.12 in 1909, or $0.28 per ton—an increase slightly greater in absolute amount than that in the total reported expense per ton ($0.27). There were considerable differences, however, among the individual states with respect to the relation between the increase in expenses and the increase in the value of ore at the mine. Pennsylvania and Tennessee were the only important producing states in which the average value of ore at the mine was less in 1909 than in 1902, and in Tennessee the decrease was only $0.02 per ton.

As already stated, the increase in the average cost of production per ton between 1902 and 1909 may possibly be attributable in part to large expenditures for development work in the later year. This inference is suggested by the extraordinary increase in the average expenditure for contract work, while the average for salaries and wages decreased.

Comparative summary for nonproducing mines: 1909 and 1902.—Table 14 presents comparative statistics for 1909 and 1902 for those nonproducing mines for which separate reports were secured. It must be borne in mind that development work was pursued also by operators of producing mines, that some operators made combined reports covering at the same time producing and nonproducing mines, and that such combined reports were necessarily tabulated with those relating exclusively to producing mines.

Table 14

	NONPRODUCING IRON MINES. United States. 1909	1902	Minnesota. 1909	1902	All other states.[1] 1909	1902
Number of mines	21	37	9	19	12	18
Number of salaried employees	46	28	31	6	15	22
Expenses of development work	$862,301	$605,559	$630,425	$360,460	$231,876	$245,099
Salaries and wages	350,560	177,317	274,204	75,936	76,356	101,381
Supplies and materials	321,556	143,541	223,217	66,310	98,339	77,231
Contract work	63,775	216,168	34,900	215,868	28,875	300
All other	126,410	68,533	98,104	2,346	28,306	66,187
Average expenses per mine	41,062	16,366	70,047	18,972	19,323	13,617

[1] Embraces Iowa, Michigan, Missouri, Pennsylvania, Tennessee, Utah, Virginia, and Wisconsin in 1909, and Alabama, California, Colorado, Iowa, Michigan, New Jersey, New York, Pennsylvania, and Utah in 1902.

The preceding table shows a marked increase in the scale of operations, particularly in Minnesota, where during the seven-year period the average expenses per mine increased nearly 300 per cent.

LAND TENURE, ROYALTIES, AND TAXES.

Land tenure—Summary for the United States.—Table 15 presents for 1909 statistics of land acreage and tenure for all mines, for producing mines, and for nonproducing mines, in the United States as a whole. The table distinguishes mineral land (that is, land definitely known to contain ore) from "Other land," but there is no doubt that much of the latter was acquired by operators in the belief that it would prove to contain ore.

Table 15

FORM OF TENURE AND CHARACTER OF LAND.	ACREAGE CONTROLLED: 1909		
	All mines.	Producing mines.	Nonproducing mines.
Total	**[1] 1,343,634**	**[1] 1,313,214**	**30,420**
Owned	1,087,865	1,064,227	23,638
Leased	265,769	248,987	6,782
Mineral land:			
Total	416,016	387,608	28,408
Owned	306,257	282,661	23,596
Leased	109,759	104,947	4,812
Other land:			
Total	927,618	925,606	2,012
Owned	781,608	781,566	42
Leased	146,010	144,040	1,970

[1] Thirteen operators failed to report acreage.

The table shows that 97.7 per cent of the total acreage controlled by operators of iron mines was connected with producing mines. Less than one-third of the total area held represented known mineral land. Of the land of both classes combined, more than four-fifths was owned by the mine operators, the rest being held under lease.

Land tenure, by states.—Table 16 gives statistics of land tenure, for producing and nonproducing mines combined, for each state reporting 1,000 or more acres of mineral land as held by iron-mine operators.

There is no apparent connection between the amount of land of all kinds, or the amount of mineral land, held by mine operators in a given state and the production of iron ore in the state. Thus, in 1909, the amount of mineral land held by operators of iron mines in New York was greater than in any other state, although the production of iron ore in New York was equal to but a small fraction of the production in Minnesota or Michigan.

There are wide differences among the states with respect to the relative importance of owned land and leased land. Thus, of all the land controlled by mine operators in Minnesota more than one-third was held under lease, while in Michigan less than one-tenth was held under lease, and in Georgia, Missouri, New York, and Ohio a very much smaller proportion still. In several states the proportion of the known mineral land held under lease is very different from the proportion of the land of all classes combined held under lease. In Michigan, Minnesota, New Jersey, and Virginia the acreage of mineral land held under lease was much greater than the acreage owned; but in the other states named in the table, except North Carolina, for which no owned land was reported, the owned mineral land greatly exceeded the leased.

ACREAGE CONTROLLED BY PRODUCING AND NONPRODUCING MINES, CLASSIFIED BY FORM OF TENURE AND CHARACTER OF LAND, BY STATES: 1909.[1]

Table 16

STATE.	ACREAGE CONTROLLED: 1909											
	All land.			Mineral land.			Timber land.			Other land.		
	Total.	Owned.	Leased.	Total.	Owned.	Leased.	Total.	Owned.	Leased.	Total.	Owned.	Leased.
United States	**[2] 1,343,634**	**1,087,865**	**255,769**	**416,016**	**306,257**	**109,759**	**456,682**	**376,409**	**80,273**	**470,936**	**405,199**	**65,737**
Alabama	63,226	53,419	9,807	52,000	42,337	9,663	4,746	4,746		6,480	6,336	144
Georgia	73,683	72,273	1,410	70,570	69,160	1,410				3,113	3,113	
Kentucky	9,600	5,600	4,000	6,600	5,600	1,000	3,000		3,000			
Michigan	249,542	225,205	24,337	19,091	6,250	12,841	162,248	154,384	7,864	68,203	64,571	3,632
Minnesota	333,822	201,586	132,236	15,805	2,710	13,095	86,302	22,970	63,332	231,715	175,906	55,809
Missouri	115,968	111,426	4,543	36,721	32,335	4,386	957	880	77	78,290	78,210	80
New Jersey	13,668	5,169	8,499	12,968	4,469	8,499	660	660		40	40	
New York	247,783	239,564	8,219	95,920	87,701	8,219	131,633	131,633		20,230	20,230	
North Carolina	4,000		4,000	1,000		1,000				3,000		3,000
Ohio	4,390	4,310	80	4,390	4,310	80						
Pennsylvania	18,234	13,376	4,858	12,165	7,307	4,858	6,065	6,065		4	4	
Tennessee	77,156	65,007	12,149	14,300	10,001	4,299	21,250	15,250	6,000	41,606	39,756	1,850
Virginia	96,445	58,453	37,992	64,272	26,450	37,822	22,953	22,953		9,220	9,050	170
Wisconsin	20,474	17,623	2,851	8,163	6,364	1,799	4,163	4,163		8,148	7,096	1,052
All other states [3]	15,643	14,855	788	2,051	1,263	788	12,705	12,705		887	887	

[1] Thirteen operators failed to report acreage.

[2] Includes a possible duplication of 755 acres which were sublet by operators of mines to other persons who may have been operators.

[3] Embraces states reporting less than 1,000 acres of mineral land, as follows: Colorado, Connecticut, Iowa, Maryland, Massachusette, Nevada, New Mexico, Texas, Utah, West Virginia, and Wyoming.

Concentration of control.—Table 17 classifies the operators who reported the amount of land controlled according to the number of acres held by each. The classification is based on the land of all kinds combined, and the table covers both producing and nonproducing mines.

Table 17

ACRES PER OPERATOR.	PRODUCING AND NONPRODUCING IRON MINES: 1909		
	Number of operators.	Land controlled.	
		Amount (acrss).	Per cent of total.
Total	[1] 178	1,343,634	100.0
Less than 100	40	2,276	0.2
100 but less than 1,000	76	25,665	1.9
1,000 but less than 10,000	47	166,129	12.4
10,000 but less than 50,000	11	315,062	23.4
50,000 and over	4	834,502	62.1

[1] Thirteen operators failed to report acreage.

As appears in the table, 4 operators, each with more than 50,000 acres, controlled over three-fifths of all land connected with iron mines, and 11 other operators, holding more than 10,000 acres each, controlled nearly one-fourth of the total acreage. The very large holders, however, usually have a great deal of land not yet proved to contain iron ore. Moreover, of the known mineral land controlled by such operators, a great deal is held in reserve. The small holders, on the other hand, are in general mining out their ore at a relatively rapid rate. These conditions are indicated by Table 18, in which the operators of producing mines are classified according to acreage controlled, and the value of the ore and by-products produced in 1909 by operators of each group is shown in comparison with the acreage controlled. As a means of convenient comparison, averages have been computed for the respective groups by dividing the value of ore produced by the acreage of all land held, but in considering these averages it should not be forgotten that much of the land is not known to contain ore.

Table 18

ACRES PER OPERATOR.	PRODUCING IRON MINES: 1909					
	Number of operators.	Acreage of all land controlled.		Value of iron ore and by-products.		
		Amount.	Per cent of total.	Amount.	Per cent of total.	Average per acre of land controlled.
Total	[1] 183	1,313,214	100.0	[1] $105,635,628	100.0	$60
Less than 100	36	1,854	0.2	2,215,719	2.1	1,195
100 but less than 1,000	68	23,613	1.8	8,433,756	8.0	357
1,000 but less than 10,000	45	159,183	12.1	41,605,987	39.4	261
10,000 but less than 50,000	10	294,062	22.4	3,405,856	3.2	12
50,000 and over	4	834,502	63.5	49,974,310	47.3	60

[1] Thirteen operators with an aggregate value of products amounting to $1,311,454 failed to report acreage.

The average value of the iron-ore production per acre of land for the several groups of operators was in the main in inverse ratio to the acreage controlled per operator. The operators who controlled less than 100 acres each on the average produced ore valued at nearly $1,200 per acre of land (of all classes) controlled, as compared with $60 per acre for operators holding 50,000 acres or over, and only $12 per acre for operators controlling 10,000 to 50,000 acres.

Royalties.—Mining on leased land has increased in importance, both absolutely and relatively, since 1879. In that year the total amount paid in royalties was $1,020,429, as compared with $6,503,908 in 1902 and $15,174,735 in 1909. The amount of royalties paid in 1889 is not available. Table 19 presents comparative statistics of tonnage on which royalties were paid in 1909 and 1879.

Table 19	1909	1879
Ore mined upon which royalties were paid (long tons)	35,543,717	2,084,396
Per cent of tonnage mined in the United States	68.4	33.0
Royalties	[1] $14,880,282	$1,020,429
Average per ton mined	$0.42	$0.49

[1] The variation between this figure and that for the total royalties shown in other tables is due to the absence of data for the quantities of ore upon which royalties were paid by some operators who mined ore both from owned and from leased land. The amount of royalties paid upon ore of this sort was less than 2 per cent of the total, and may, therefore, be disregarded.

In 1909 royalties were paid on more than two-thirds of all ore mined, but in 1879 on less than one-third. The average royalty per ton decreased during the 30 years, from $0.49 to $0.42.

Practically all of the ore (96.9 per cent) upon which royalties were paid in 1909 was mined in the Lake Superior district. The amount reported as produced under royalty in that district was 34,447,782 tons, being 81.8 per cent of the total output of the district. The royalties paid on this ore were $14,637,203, in addition to which a small amount was paid in royalties on ore the tonnage of which was not reported separately. The average royalty per ton in the Lake Superior district was the same as in the United States taken as a whole.

Taxes.—Taxes constitute an important item in the total expense of iron mines. In recent years the extensive lands held by the operators of iron mines, particularly in the Lake Superior district, have been taxed at much higher rates than formerly.

Table 20

STATE.	PRODUCING MINES WHICH REPORTED BOTH THE AMOUNT OF TAXES PAID AND THE ACREAGE OF LAND CONTROLLED: 1909							
	Taxes paid.		Acreage controlled.[1]					
			All classes of land.			Mineral land.		
	Amount.	Average per ton of ore mined.	Total.	Owned.	Leased.	Total.	Owned.	Leased.
United States	$3,963,251	$0.06	1,176,100	937,133	238,967	352,574	257,567	95,007
Alabama	[2] 30,092	0.01	53,216	48,810	4,406	41,990	37,728	4,262
Georgia	3,065	0.01	69,957	69,767	190	66,844	66,654	190
Maryland	582	0.03	10,570	10,490	80	170	90	80
Missouri	810	0.01	2,430	2,147	283	1,263	1,057	206
Michigan	961,401	0.08	247,656	223,419	24,237	17,205	4,464	12,741
Minnesota	2,810,266	0.10	332,153	201,386	130,767	14,256	2,510	11,746
New Jersey	7,350	0.01	13,640	5,141	8,499	12,940	4,441	8,499
New York	51,491	0.04	247,783	239,564	8,219	95,920	87,701	8,219
Ohio	389	0.03	4,310	4,230	80	4,310	4,230	80
Pennsylvania	19,415	0.03	17,468	12,733	4,735	11,399	6,664	4,735
Tennessee	6,863	0.01	49,756	40,007	9,749	12,750	9,001	3,749
Utah	502	0.01	268	268	......	268	268	......
Virginia	[2] 16,420	0.02	94,003	57,437	36,566	61,830	25,434	36,396
Wisconsin	46,710	0.05	15,150	12,379	2,771	2,839	1,120	1,719
All other[3]	7,895	0.01	17,740	9,355	8,385	8,590	6,205	2,385

[1] In addition to the acreage shown in the preceding table, 137,114 acres were held by operators who reported no taxes. It is probable that the taxes may have been included by them in the amounts reported for "Sundry expenses." Of those holdings, 127,094 acres represented land owned and 10,020 acres land leased. The holdings of mineral land aggregated 35,034 acres, the rest being timber and other land.

[2] In Alabama the sum of $6,959, and in Virginia the sum of $145, was reported by operators who failed to report acreage.

[3] Embraces Connecticut, Kentucky, Massachusetts, Nevada, New Mexico, North Carolina, Texas, West Virginia, and Wyoming.

The taxes on lands held under lease are ordinarily paid by the operators and not by the owners. In the preceding table the taxes paid are shown in comparison with the acreage of land held. This table includes only producing mines for which both acreage of land controlled and taxes were reported.

The largest amount of taxes was paid in Minnesota and Michigan, the total for these two states ($3,772,000) being 95.2 per cent of the total for the United States. The taxes in Minnesota were equal to $0.10 per ton of ore mined during the year, or to nearly $9 per acre of the land held (by ownership or lease) by the operators, and in Michigan the taxes were equal to $0.08 per ton mined, or to nearly $4 per acre held, whereas in other states the average amount of taxes ranged from $0.01 to $0.05 per ton. For all states taken together, except Minnesota and Michigan, the taxes averaged only $0.32 per acre controlled by the operators. It should be noted in this connection that in Minnesota less than 5 per cent of the total acreage owned or held under lease was reported as known mineral land, and in Michigan only about 7 per cent.

PERSONS ENGAGED IN THE INDUSTRY.

Salaried employees.—Table 21 shows the number of salaried employees classified according to grade for all mines in 1909 and their total salaries. The number of salaried employees, 2,916, constituted only 5.2 per cent of the total number of persons engaged in the industry.

Table 21

CLASS.	SALARIED EMPLOYEES, ALL MINES: 1909	
	Number.	Salaries.
Total	**2,916**	**$3,423,992**
Officers of corporations	134	425,914
Superintendents and managers	917	1,342,143
Clerks and other subordinate salaried employees	1,865	1,655,935

Wage earners, by age and occupation: 1909.—Table 22 shows the number of wage earners employed in producing mines on December 15, 1909, or the nearest representative day, according to age and occupation. The distinction between miners and miners' helpers is not always very definite, and in all other tables these two classes are therefore combined.

Table 22

CLASS.	WAGE EARNERS IN PRODUCING IRON MINES: 1909	
	Number.	Per cent of total.
Total	**52,230**	**100.0**
Men 16 years of age and over:		
Engineers, firemen, machinists, carpenters, and other mechanics	7,073	13.5
Miners	21,708	41.6
Miners' helpers	3,218	6.2
All other	19,742	37.8
Boys under 16 years of age	489	0.9

The usual division of wage earners into skilled and unskilled is indicated only indirectly in the preceding classification. The group of engineers, firemen, machinists, carpenters, and other mechanics, comprising 13.5 per cent of all employees in 1909, belong to the skilled class. On the other hand, miners' helpers and other employees, aggregating 44.9 per cent of the total force, may be classed as unskilled. Between these two extremes are the miners, who in 1909 constituted 41.6 per cent of all wage earners. Probably some of these should be classed as skilled and some as unskilled.

Wage earners employed, by months.—Table 23 shows, for the United States as a whole, the number of wage earners reported as employed on the 15th day of each month in all mines and in producing mines and nonproducing mines separately, together with percentages showing the ratio between the number reported for each month and the number reported for the month of maximum employment.

Table 23

MONTH.	WAGE EARNERS EMPLOYED IN IRON MINES ON THE 15TH DAY OF EACH MONTH: 1909					
	Number.[1]			Per cent of maximum.		
	All mines.	Producing mines.	Nonproducing mines.	All mines.	Producing mines.	Nonproducing mines.
January	43,746	43,491	255	84.7	85.2	33.9
February	44,373	44,076	297	85.9	86.3	39.5
March	44,795	44,446	349	86.7	87.1	46.4
April	43,897	43,580	317	85.0	85.4	42.2
May	46,029	45,712	317	89.1	89.5	42.2
June	46,589	46,233	356	90.2	90.6	47.3
July	48,254	47,794	460	93.4	93.6	61.2
August	49,326	48,763	563	95.5	95.5	74.9
September	50,748	50,191	557	98.2	98.3	74.1
October	51,639	**51,055**	584	99.9	100.0	77.7
November	**51,654**	51,031	623	100.0	99.9	82.8
December	51,326	50,574	**752**	99.4	99.1	100.0

[1] The figures in boldface type represent the maximum number employed.

In the industry as a whole, November was the month of maximum employment in 1909, 51,654 wage earners being reported. The month of minimum employment was January, the 43,746 wage earners reported for that month constituting 84.7 per cent of the maximum.

It will be noted that the number of wage earners reported for all mines on a representative day, which is presented in various other tables, aggregated 52,983, or somewhat more than the number shown for November 15, which was the largest number reported for the 15th of any month. While for many mines the representative day selected for reporting wage earners in detail was December 15, there were numerous cases in which December was not a representative month and in which reports were made for some other date. It must be borne in mind that the month of maximum employment varied for the several states. The aggregate number reported by the mine operators for the representative day may be accepted as more nearly approximating the actual number of wage earners who derived a livelihood from iron mining in

1909 than the number reported for November. This conclusion is suggested by the statistics presented in Table 24, which relate to producing mines in those states where at least 500 wage earners were employed during the month of maximum employment.

Table 24

STATE.	WAGE EARNERS IN PRODUCING IRON MINES: 1909				
	Maximum.		Minimum.		Per cent of maximum.
	Month.	Number.	Month.	Number.	
Alabama	November	5,652	June	4,760	84.2
Georgia	December	734	May	380	51.8
Michigan	December	16,052	April	14,128	88.0
Minnesota	October	16,740	January	12,679	75.7
New Jersey	October	2,130	May	1,749	82.1
New York	December	2,510	May	1,792	71.4
Pennsylvania	December	696	March	437	62.8
Tennessee	December	1,523	April	1,136	74.6
Virginia	September	3,019	January	2,590	85.8
Wisconsin	November	1,446	January	1,039	71.9

The fluctuations of employment are largely dependent upon the character of operations, the method of working, and climatic conditions. Table 25 shows the monthly fluctuations of employment separately for open-pit and underground mines, so far as separate reports for each class were secured.

As can be seen from Table 25, in the Lake Superior district the range of fluctuation of employment in underground mines did not exceed 12 per cent, as compared with a fluctuation of 15.1 per cent in the Southern district. In open-pit mining, on the other hand, the force employed in August in the Lake Superior district was more than twice as large as that employed in January, February, or March, while in the Southern district the variation between the months of maximum and of minimum employment was only 18.8 per cent of the maximum.

Table 25

MONTH.	WAGE EARNERS EMPLOYED IN PRODUCING IRON MINES ON 15TH OF EACH MONTH: 1909											
	Number.[1]						Per cent of maximum.					
	United States.		Lake Superior district.		Southern district.		United States.		Lake Superior district.		Southern district.	
	Open-pit mining only.	Underground mining only.	Open-pit mining only.	Underground mining only.	Open-pit mining only.	Underground mining only.	Open-pit mining only.	Underground mining only.	Open-pit mining only.	Underground mining only.	Open-pit mining only.	Underground mining only.
January	6,762	26,281	879	17,506	3,071	3,843	79.4	88.6	43.8	88.0	95.2	87.7
February	6,627	26,700	877	17,956	2,821	3,754	77.8	90.0	43.7	90.3	87.4	85.6
March	6,806	26,956	878	18,142	2,912	3,953	79.9	90.9	43.7	91.2	90.2	90.2
April	7,207	25,822	1,099	17,589	2,848	3,795	84.6	87.0	54.7	88.4	88.3	86.6
May	7,587	26,121	1,829	17,789	2,621	3,879	89.0	88.0	91.0	89.4	81.2	88.5
June	7,798	26,066	1,983	17,768	2,628	3,722	91.5	87.9	98.7	89.3	81.4	84.9
July	8,067	26,995	1,962	18,307	2,785	3,957	94.7	91.0	97.7	92.0	86.3	90.3
August	8,388	27,504	**2,009**	18,628	2,951	4,033	98.5	92.7	100.0	93.6	91.4	92.0
September	8,505	28,694	1,953	19,316	3,079	4,173	99.8	96.7	97.2	97.1	95.4	95.2
October	8,463	29,252	1,985	19,690	3,175	4,258	99.3	98.6	98.8	99.0	98.4	97.1
November	**8,520**	29,509	1,938	19,763	**3,227**	**4,384**	100.0	99.5	96.5	99.3	100.0	100.0
December	8,501	**29,668**	1,799	**19,895**	**3,227**	4,284	99.8	100.0	89.5	100.0	100.0	97.7

[1] The figures in boldface type represent the maximum number employed.

Days in operation.—The number of working days during the year varies considerably for different enterprises. Table 26 gives the distribution of producing enterprises according to the number of days in operation during 1909.

Table 26

DAYS IN OPERATION.	PRODUCING IRON-MINING ENTERPRISES: 1909	
	Number.	Per cent of total.
Total	[1] 299	100.0
30 or less	10	3.3
31 to 60	4	1.3
61 to 90	17	5.7
91 to 120	15	5.0
121 to 150	20	6.7
151 to 180	18	6.0
181 to 210	9	3.0
211 to 240	17	5.7
241 to 270	15	5.0
271 to 300	64	21.4
301 to 330	100	33.4
331 to 365	10	3.3

[1] Exclusive of 1 enterprise for which the number of days in operation was not reported.

The variation in the number of working days is largely dependent upon the method of working, as appears from Table 27, which classifies according to the number of days in operation, so far as the information is available, open-pit and underground mines separately.

Table 27

DAYS IN OPERATION.	PRODUCING IRON-MINING ENTERPRISES: 1909	
	Open-pit mining exclusively.	Underground mining exclusively.
Total	[1] 137	138
270 days or less	85	31
Over 270 days	52	107

[1] Exclusive of 1 enterprise for which the number of days in operation was not reported.

Prevailing hours of labor.—Table 28 classifies all mines according to the prevailing hours of labor, and gives the number and percentage in each group. The wage earners of each mine are classed as a total, regardless of the fact that some may work more or fewer hours than those prevailing for the majority.

Table 28

PREVAILING HOURS PER DAY.	ALL IRON MINES: 1909			
	Mines with prevailing hours specified.		Wage earners in mines where the prevailing hours were as specified.	
	Number.	Per cent of total.	Number.	Per cent of total.
Total	[1] 494	100.0	52,983	100.0
8 hours	[2] 25	5.1	2,344	4.4
9 hours	32	6.5	2,132	4.0
10 hours	[3] 426	86.2	47,555	89.8
11 hours	9	1.8	805	1.5
12 hours	2	0.4	147	0.3

[1] Exclusive of 6 mines operated by contract work and 4 that employed no wage earners.

[2] Includes 7 mines which were run by 2 shifts of 8 and 10 hours, respectively.

[3] Exclusive of 7 mines which were run by 2 shifts.

The 10-hour working day (for all or most employees) is customary in a large majority of the iron mines of the United States, and was the rule, without exception, in the states of Iowa, Kentucky, New Mexico, New York, North Carolina, Ohio, Texas, West Virginia, Wisconsin, and Wyoming. The 11-hour day was reported for 2 mines in New Jersey, 6 in Tennessee, and 1 in Alabama; and a 12-hour day was reported for 2 mines in Georgia. On the other hand, the 8-hour day was reported for all mines in Utah, 5 mines in Alabama, 6 in Michigan, 3 in Minnesota, 2 in New Jersey, and 1 each in Pennsylvania, Virginia, and Nevada. A 9-hour day was reported by a considerable number of mines distributed quite generally among the states.

PRODUCTION AND CONSUMPTION OF ORE.

Summary for the United States: 1909.—The following statement shows in detail the quantity and value of the products of iron mines in 1909, and also the value of iron ore produced by concerns in other industries.

Production of iron mines:	
Gross production, long tons	51,947,129
Production after concentration, long tons	51,717,920
Ore used or shipped for use in affiliated furnaces and sold—	
Quantity, long tons	50,521,208
Gross value	$159,464,353
Deductions for haulage and freight	51,969,424
Deductions for commissions and storage	955,355
Net value at mines	106,539,574
Value of by-products	407,508
Total net value of ore used or shipped for use and sold, and of by-products	106,947,082
Value of iron ore produced in other industries	175,965
Total net value of iron ore	106,715,539

The gross production of iron ore in 1909 in iron mines was 51,947,129 tons. The amount of ore used or shipped for use in blast furnaces affiliated with the mines and of ore sold was somewhat less, 50,521,208 tons. Only to such ore was a value assigned in the returns. The value of much of this ore was reported on a basis which included cost of delivery. The gross value of the ore as reported, including delivery and other charges, was $159,464,353, but the expenditures for haulage and freight and for commissions and storage amounted to $52,924,779, so that the net value of the ore at the mines was $106,539,574. In addition to iron ore, the mines produced various by-products, the most important of which was manganiferous ore, the total value of such by-products being $407,508, so that the net value of iron ore used or shipped for use and sold and of by-products combined was $106,947,082.[1] The value of iron ore produced in other industries (gold and silver mining, limestone quarrying, and brick and tile manufacturing) in 1909 was reported as $175,965, which, added to the net value of ore at the iron mines ($106,539,574), gives a total value of iron ore for 1909 amounting to $106,715,539.

Comparison with the report of the United States Geological Survey.—The statistics relating to the quantity and value of products were collected by the Bureau of the Census in cooperation with the United States Geological Survey. The schedule called for the quantity of ore mined, of ore sold, and of ore used by the mine operator in his own blast furnaces, and the stocks of iron ore on hand at the mine, at lake ports, or elsewhere, on January 1, and December 31, 1909. Many of the answers to these inquiries were found, on examination, to be inconsistent. The statistics of production in the present report, therefore, represent primarily ore shipments from the mines, comprising the ore sold in the market, as well as that used by blast furnaces affiliated with the mines. Wherever the quantity of ore actually mined is shown it represents the figures reported by the mine operators, these figures being less liable to error than would be those computed from the quantities reported as in stock at the mines at the beginning and at the end of the year and as used or sold.

The United States Geological Survey, on the other hand, has computed the annual production from the shipments and the stocks at lake ports and other transportation terminals. Furthermore, the statistics of the United States Geological Survey include a small amount of iron ore obtained as a by-product of other than iron mines, whereas the quantities of iron ore shown in the present report relate solely to the product of iron mines. The total quantity mined, after concentration of 882,548 tons in New York, as shown in the present report, was 51,717,920 long tons, whereas the total production shown in the report of the United States Geological Survey for 1909 was 51,294,271 tons, the former quantity being 423,649 tons, or slightly less than 1 per cent, in excess of the latter. All of this difference except 57,433 tons is found in the figures for the state of Alabama. The total of the United States Geological Survey for that state represents virtually the shipments of ore plus the consumption by blast furnaces at the mines. The variation between this figure and the total shipments and consumption at the mines, as shown in this report, amounts to only 8,892 tons. The variation between the two reports for all other states is equal to only 0.1 per cent.

---

[1] It may be noted that some of the expenditure for haulage, freight, commissions, and storage applied to the by-products, particularly manganiferous ore, but, since the great bulk of it undoubtedly applied to the iron ore itself, it has been considered preferable to deduct the entire amount for haulage, freight, commissions, and storage from the gross value of iron ore in order to give a net value for this product.

As already stated, however, the reports of the Geological Survey are intended primarily to represent shipments, and should therefore be compared with the statistics of the Census Bureau as to the amount of ore used or shipped for use by blast furnaces affiliated with the iron mines or sold, rather than with those as to the quantity produced. The amount reported in the census returns as so used, shipped, and sold was 50,521,208 tons, as compared with the Geological Survey report of 51,294,271 tons, the difference being about 1.5 per cent. The difference is not sufficient to cast any doubt upon the approximate correctness of either set of figures.

Disposition of ore.—Table 29 shows, for the United States as a whole, for the two principal districts into which it is divided, and for individual states, the disposition of the ore which was produced by iron mines in 1909 and either used or shipped for use in affiliated blast furnaces or sold.

DISPOSITION OF ORE USED AND SOLD, BY DISTRICTS AND STATES: 1909.

Table 29 DISTRICT AND STATE.	IRON ORE USED AND SOLD (LONG TONS).								
	Total.	Used in blast furnaces affiliated with mines.			Sold.	Per cent of total.			
						Used in affiliated blast furnaces.			Sold.
		Total.	At mine.	At a distance.		Total.	At mine.	At a distance.	
United States	**50,521,208**	**32,239,481**	**4,432,808**	**27,806,673**	**18,281,727**	**63.8**	**8.8**	**55.0**	**36.2**
LAKE SUPERIOR DISTRICT	41,242,374	25,467,822	103,574	25,364,248	15,774,552	61.8	0.3	61.5	38.2
Michigan	11,924,995	4,224,631	31,265	4,193,366	7,700,364	35.4	0.3	35.1	64.6
Minnesota	28,314,713	21,047,279	....	21,047,279	7,267,434	74.3	....	74.3	25.7
Wisconsin	1,002,666	195,912	72,309	123,603	806,754	19.5	7.2	12.3	80.5
SOUTHERN DISTRICT	5,181,605	4,632,318	3,467,984	1,164,334	549,287	89.4	66.9	22.5	10.6
Alabama	4,312,360	4,087,350	3,281,579	805,771	225,010	94.8	76.1	18.7	5.2
Georgia	219,976	157,525	19,622	137,903	62,451	71.6	8.9	62.7	28.4
Tennessee	649,269	387,443	166,783	220,660	261,826	59.7	25.7	34.0	40.3
OTHER STATES	4,097,229	2,139,341	861,250	1,278,091	1,957,888	52.2	21.0	31.2	47.8
Maryland	22,675	15,790	73	15,717	6,885	69.6	0.3	69.3	30.4
Missouri	86,954	50,981	....	50,981	35,973	58.6	....	58.6	41.4
New Jersey	559,828	294,075	148,729	145,346	265,753	52.5	26.6	25.9	47.5
New York	1,024,173	87,156	87,156	....	937,017	8.5	8.5	....	91.5
Ohio	13,468	5,839	5,839	....	7,629	43.4	43.4	....	56.6
Pennsylvania	664,813	146,520	23,789	122,731	518,293	22.0	3.6	18.4	78.0
Utah	33,784	....	....	....	33,784	....	....	....	100.0
Virginia	837,625	785,673	546,223	239,450	51,952	93.8	65.2	28.6	6.2
All other[1]	853,909	753,307	49,441	703,866	100,602	88.2	5.8	82.4	11.8

[1] Embraces Colorado, Connecticut, Kentucky, Massachusetts, Nevada, New Mexico, North Carolina, Texas, West Virginia, and Wyoming.

Of the 50,521,208 tons of ore reported as used or sold, 32,239,481 tons, or 63.8 per cent, were used or shipped for use in blast furnaces affiliated with the mines and 18,281,727 tons, or 36.2 per cent, were sold. There was considerable variation among the districts and states with respect to the disposition of ore. In the Southern district nearly nine-tenths of the ore was used in or shipped to blast furnaces affiliated with the mines—being largely used in furnaces located immediately at the mines—while of the ore of the Lake Superior district the proportion so used or shipped was 61.8 per cent, practically none being used in blast furnaces located at the mines. There was, however, a conspicuous difference between the conditions in Minnesota, on the one hand, and in Michigan and Wisconsin, on the other. Most of the ore produced in New York was sold, but in the majority of the states the ore sold constituted less than half of the total in 1909.

Value of ore disposed of in different ways, with average values.—Table 30 shows, for the United States as a whole, for the two principal producing districts, and for selected states, the quantity, value, and average value of ore disposed of in different ways. In the case of ore sold it distinguishes that sold on the basis of prices "f. o. b. mine" and that sold "f. o. b. market"—that is, on the basis of prices including cost of delivery. The table also shows the gross value, including that of by-products, of all ore used or shipped for use in affiliated furnaces or sold, the amount of deductions for haulage, freight, commissions, and storage, and the net value of all products at the mines.

The average values per ton in which delivery charges are included are, of course, not comparable with those based on mine prices. Moreover, in the case of average values in which delivery charges are included, comparisons between different districts have little significance on account of the differences in the distances which the ore is transported. The value of most of the ore shipped for use in blast furnaces affiliated with the mines but located at a distance, was reported on the delivered basis, but comparisons between the average values per ton shown for such ore, and the average values per ton shown for ore sold f. o. b. market, are of doubtful significance because the value reported for some of the ore shipped for use in affiliated furnaces represented the net value at the mine, and also because the ore shipped for use in affiliated blast furnaces may have been shipped a greater or less distance than that sold f. o. b. market.

DISPOSITION OF IRON ORE USED AND SOLD, WITH AVERAGE VALUES, BY DISTRICTS AND STATES: 1909.

Table 30	United States.	LAKE SUPERIOR DISTRICT.			SOUTHERN DISTRICT.			OTHER STATES.			
		Total.	Minnesota.	Other states.[1]	Total.	Alabama.	Other states.[2]	Total.	Pennsylvania.	Virginia.	All other.[3]
Ore used in blast furnaces affiliated with the mines:											
Total—											
Long tons	32,239,481	25,467,822	21,047,279	4,420,543	4,632,318	4,087,350	544,968	2,139,341	146,520	785,673	1,207,148
Value	$102,804,183	$91,974,470	$75,466,965	$16,507,505	$5,516,743	$4,767,062	$749,681	$5,312,970	$230,720	$1,574,100	$3,508,150
Average value per ton	$3.19	$3.61	$3.59	$3.73	$1.19	$1.17	$1.38	$2.48	$1.57	$2.00	$2.91
At mine—											
Long tons	4,432,808	103,574	....	103,574	3.467,984	3,281,579	186,405	861,250	23,789	546,223	291,238
Value	$6,151,262	$137,583	....	$137,583	$4,019,623	$3,755,975	$263,548	$1,994,156	$64,171	$1,031,213	$898,772
Average value per ton	$1.39	$1.33	....	$1.33	$1.16	$1.14	$1.41	$2.32	$2.70	$1.89	$3.09
At a distance—											
Long tons	27,806,673	25,364,248	21,047,279	4,316,969	1,164,334	805,771	358,663	1,278,091	122,731	239,450	915,910
Value	$96,652,921	$91,836,887	$75,466,965	$16,369,922	$1,497,220	$1,011,087	$486,133	$3,318,814	$166,549	$542,887	$2,609,378
Average value per ton	$3.48	$3.62	$3.59	$3.79	$1.29	$1.25	$1.36	$2.60	$1.36	$2.27	$2.85
Ore sold:											
Total—											
Long tons	18,281,727	15,774,552	7,267,434	8,507,118	549,287	225,010	324,277	1,957,888	518,293	51,952	1,387,643
Value	$56,660,170	$51,195,872	$22,435,862	$28,760,010	$675,831	$254,946	$420,885	$4,788,467	$560,587	$134,535	$4,093,345
Average value per ton	$3.10	$3.25	$3.09	$3.38	$1.23	$1.13	$1.30	$2.45	$1.08	$2.59	$2.95
F. o. b. mine—											
Long tons	4,350,695	2,133,504	443,977	1,689,527	544,701	222,374	322,327	1,672,490	515,781	48,752	1,107,957
Value	$9,117,482	$4,719,094	$649,360	$4,069,734	$665,764	$248,689	$417,075	$3,732,624	$554,314	$126,535	$3,051,775
Average value per ton	$2.10	$2.21	$1.46	$2.41	$1.22	$1.12	$1.29	$2.23	$1.07	$2.60	$2.75
F. o. b. market—											
Long tons	13,931,032	13,641,048	6,823,457	6,817,591	4,586	2,636	1,950	285,398	2,512	3,200	279,686
Value	$47,542,688	$46,476,778	$21,786,502	$24,690,276	$10,067	$6,257	$3,810	$1,055,843	$6,273	$8,000	$1,041,570
Average value per ton	$3.41	$3.41	$3.19	$3.62	$2.20	$2.37	$1.95	$3.70	$2.50	$2.50	$3.72
Total ore used in affiliated blast furnaces or sold.											
Long tons	50,621,208	41,242,374	28,314,713	12,927,661	5,181,605	4,312,360	869,245	4,097,229	664,813	837,625	2,594,791
Gross value, including that of by-products[4]	$159,871,861	$143,568,304	$97,902,827	$45,665,477	$6,192,574	$5,022,008	$1,170,566	$10,110,983	$795,322	$1,708,835	$7,606,826
Deductions for haulage, freight, commissions, and storage	52,924,779	51,351,452	40,826,692	10,524,760	107,066	82,859	24,207	1,466,261	6,026	25,832	1,434,403
Net value at mine	106,947,082	92,216,852	57,076,135	35,140,717	6,085,508	4,939,149	1,146,359	8,644,722	789,296	1,683,003	6,172,423
Average value per ton	2.12	2.24	2.02	2.72	1.17	1.15	1.32	2.11	1.19	2.01	2.38

[1] Embraces Michigan and Wisconsin.

[2] Embraces Georgia and Tennessee.

[3] Embraces Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Texas, Utah, West Virginia, and Wyoming.

[4] The value of by-products of iron mines has been included in the gross value of iron ore in order that statistics for individual operators might not be disclosed.

It is noteworthy that in some of the states the average values given for ore used in blast furnaces affiliated with and located at the mines are materially lower than the values of ore sold f. o. b. mine, but that the opposite is the case in other states. These variations may be due to differences in practice as to the assignment of values to ore used in blast furnaces affiliated with the mines, which may in some cases be based on market prices and in other cases on arbitrary prices. There are, however, differences in the qualities of ores which affect the values and render all such comparisons of little significance unless much more detailed information is available than appears in Table 30.

According to the table the average net value at the mine of all ore of the Lake Superior district was, in 1909, $2.24, while the average for all ore of the southern district was very much lower, $1.17. This difference is largely attributable to difference in the quality of the ore, that of the Lake Superior district containing in general a larger percentage of iron.

With reference to the value of by-products, it may be noted that the great bulk of the total value of by-products shown for the United States ($407,508) was reported from Wisconsin and largely represented manganiferous ore.

Haulage, freight, commissions, and storage.—The total deductions shown in Table 30 were charged against by-products as well as against the iron ore itself. Table 31 shows, by states, the expenses of haulage and freight, the quantity of ore shipped upon which these expenses were charged, and the average expense per ton. The figures as to the amount of ore represent iron ore and also manganiferous ore reported as a by-product in the state of Wisconsin.

As is shown in Table 31, the highest average expense per ton for haulage and freight, $1 49, was borne by ore from Minnesota, and the lowest, $0.13, by ore from Alabama. This difference is due to the fact that most of the ore from Minnesota was transported a long distance to blast furnaces located in the vicinity of coal mines, mainly in Illinois, Indiana, Ohio, Pennsylvania, and New York, while in Alabama the iron and coal mines are in close proximity and the blast furnaces are therefore at or not very far from the mines.

Table 31

DISTRICT AND STATE.	PRODUCING IRON MINES: 1909		
	Ore shipped on which freight and haulage were reported (long tons).	Expenses for haulage and freight.	
		Amount.	Average per ton.
United States	[1]40,129,382	$51,969,424	$1.30
LAKE SUPERIOR DISTRICT:			
Michigan	10,334,415	9,387,925	0.91
Minnesota	27,115,947	40,347,573	1.49
Wisconsin	[1]808,759	663,020	0.82
SOUTHERN DISTRICT:			
Alabama	637,325	82,859	0.13
Tennessee	69,195	23,172	0.33
OTHER STATES:			
Maryland	1,614	839	0.52
Missouri	25,818	6,198	0.24
New Jersey	141,406	108,438	0.77
New York	152,012	72,746	0.48
Pennsylvania	11,660	6,026	0.52
Utah	33,784	13,527	0.40
Virginia	79,623	25,832	0.32
All other [2]	717,824	1,231,269	1.72

[1] Includes manganiferous ore reported as a by-product of iron mines in Wisconsin.

[2] Embraces Colorado, Georgia, Nevada, New Mexico, North Carolina, Ohio, and Wyoming.

The deductions for storage and commissions were practically confined to ore shipped from Minnesota and Michigan, as is shown by Table 32, which gives for the United States, for Minnesota, and for Michigan, the tonnage of ore shipped upon which storage and commissions were reported, and the total amounts paid and the average per ton.

Table 32

STATE.	PRODUCING IRON MINES: 1909		
	Ore shipped on which commissions and storage were reported (long tons).	Commissions and storage charges.	
		Amount.	Average per ton.
United States	13,670,820	$955,355	$0.07
Minnesota	7,271,294	479,119	0.07
Michigan	6,071,129	450,627	0.07

Consumption of domestic ore compared with production.—Table 33 shows for 1909 the aggregate amount of ore reported by the mine operators as used or shipped for use in affiliated blast furnaces or sold, in comparison with the consumption as reported by the blast furnaces. The consumption shown for each district is not the consumption of the ore from that district, but that of the blast furnaces located in them.

Table 33

DISTRICT.	IRON ORE (LONG TONS): 1909	
	Output of mines in districts specified (quantity used and sold).	Consumption as reported by blast furnaces in the districts specified.
United States	50,521,208	47,429,236
Lake Superior district	41,242,374	1,324,447
Southern district	5,181,605	5,245,488
Other states	[1]4,097,229	[2]40,859,301

[1] Represents output for Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

[2] Represents consumption in Colorado, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Missouri, New Jersey, New York, Ohio, Pennsylvania, Texas, Virginia, and West Virginia.

It is noteworthy that the consumption reported by blast furnaces was considerably less than the output (used or sold) reported by mines. A good deal of the ore shipped from the Lake Superior district, whether for sale or for use in affiliated blast furnaces, was evidently stored for later consumption either at the furnaces or at lower lake ports. The preceding table emphasizes the fact that most of the iron ore in the United States is consumed at a distance from the mines producing it. Of the ore produced in the Lake Superior district the great bulk is shipped to other districts. The Southern district is exceptional in that most of the ore is consumed near the point of production.

Affiliation of mines with blast furnaces.—Table 34 shows, by districts and states, the number of mines affiliated with blast furnaces, either adjoining or at a distance, and the number without blast furnaces affiliated.

Table 34

DISTRICT AND STATE.	NUMBER OF PRODUCING IRON MINES: 1909			
	Total.	With affiliated blast furnaces adjoining.	With affiliated blast furnaces at a distance.	Without affiliated blast furnaces.
United States	483	114	184	185
LAKE SUPERIOR DISTRICT	195	16	118	61
Michigan	83	13	35	35
Minnesota	101	....	80	21
Wisconsin	11	3	3	5
SOUTHERN DISTRICT	116	43	35	38
Alabama	52	17	18	17
Georgia	18	1	7	10
Tennessee	46	25	10	11
OTHER STATES	172	55	31	86
Colorado	1	....	....	1
Connecticut	1	1	....	....
Kentucky	2	1	....	1
Maryland	13	1	1	11
Massachusetts	1	1	....	....
Missouri	33	....	3	30
Nevada	1	....	....	1
New Jersey	10	4	2	4
New Mexico	1	....	1	....
New York	19	5	....	14
North Carolina	1	....	1	....
Ohio	4	1	1	2
Pennsylvania	19	6	7	6
Texas	1	1	....	....
Utah	5	....	....	5
Virginia	58	34	13	11
West Virginia	1	....	1	....
Wyoming	1	....	1	....

From this table it can be seen that the majority of iron mines were connected with blast furnaces, although in most cases the furnaces were located at a considerable distance from the mines. The connection is usually one of common ownership or control only, each branch of the business being operated independently.

Not all of the ore produced from mines affiliated with blast furnaces is used in these blast furnaces. It is often necessary, for metallurgical reasons, to mix ores of different composition, which may necessitate the purchase of ore by blast furnaces which control mines. Even apart from this condition it often happens that blast furnaces supplied in the main from mines operated under the same control nevertheless find it necessary to buy ore in the market, and conversely the mines may produce more ore than the affiliated furnaces can use. The disposition of the ore derived from mines connected with blast furnaces is shown for 1909 in Table 35.

Table 35

DISTRICT.	IRON ORE PRODUCED IN MINES AFFILIATED WITH BLAST FURNACES (LONG TONS): 1909					
	With blast furnaces adjoining.			With blast furnaces at a distance.		
	Total.	Used by affiliated furnaces.	Sold.	Total.	Shipped for use by affiliated furnaces.	Sold.
United States	**7,069,067**	**4,432,808**	**2,636,259**	**32,332,448**	**27,806,873**	**4,525,775**
Lake Superior dist.	2,031,891	103,574	1,928,317	29,268,327	25,354,248	3,904,079
Southern district	3,499,062	3,467,984	31,078	1,186,598	1,164,334	22,264
Other states[1]	1,538,114	861,250	676,864	1,877,523	1,278,091	599,432

[1] Embraces Connecticut, Kentucky, Maryland, Massachusetts, Missouri, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Virginia, West Virginia, and Wyoming.

As appears from Table 35, in the Lake Superior district more than nine-tenths of the total output of mines with affiliated blast furnaces adjoining was sold in the market, but in the Southern district only about 1 per cent. Of the mines which shipped their ore to distant furnaces operated under the same ownership, those of the Lake Superior district sold nearly 4,000,000 tons, or 13.3 per cent of their total shipments, whereas those of the Southern district sold but 1.9 per cent of the ore shipped. Of the total products of "Other states" 1,538,114 tons were reported by mines with blast furnaces adjoining.

Table 36 shows, by districts, the amount of iron ore sold in 1909 by operators of mines with affiliated blast furnaces, whether adjoining the mines or at a distance, and by operators of mines with no affiliated blast furnaces.

Table 36

DISTRICT.	IRON ORE SOLD BY OPERATORS (LONG TONS): 1909			
	Total.	With affiliated blast furnaces adjoining mines.	With affiliated blast furnaces at a distance from mines.	Not affiliated with blast furnaces.
United States	**18,281,727**	**2,636,259**	**4,525,775**	**11,119,693**
Lake Superior district	15,774,552	1,928,317	3,904,079	9,942,156
Southern district	549,287	31,078	22,264	495,945
Other states[1]	1,957,888	676,864	599,432	681,592

[1] Embraces Colorado, Kentucky, Maryland, Missouri, Nevada, New Jersey, New York, Ohio, Pennsylvania, Texas, Utah, and Virginia.

As shown by the table, about two-thirds of the total quantity of ore sold was shipped from mines not affiliated with blast furnaces, and about one-fourth from mines affiliated with blast furnaces located at a distance.

Consumption of domestic and foreign ore.—The domestic mines supplied practically the entire demand for iron ore in 1909, although foreign ore was imported to a limited extent, particularly for use in Pennsylvania. Small quantities of imported ore were also used in some of the states on the Atlantic seaboard, in California, in Ohio, and in Illinois. The details are shown in Table 37.

Table 37

STATE.	IRON ORE CONSUMED IN BLAST FURNACES (LONG TONS): 1909		
	Total.	Domestic ore.	Foreign ore.
United States	**49,189,015**	**47,429,236**	**1,759,779**
Pennsylvania	20,267,712	18,978,892	1,288,820
All other states:			
States using imported ore[1]	18,789,706	18,318,747	470,959
States using no imported ore[2]	10,131,597	10,131,597	

[1] Embraces California, Delaware, Illinois, Maryland, New Jersey, New York, and Ohio.

[2] Embraces Colorado, Connecticut, Georgia, Indiana, Kentucky, Massachusetts, Michigan, Minnesota, Missouri, Tennessee, Texas, Virginia, West Virginia, and Wisconsin.

SCALE OF PRODUCTION.

Classification of operators according to the number of wage earners employed.—Table 38, relating to the United States as a whole, classifies according to the number of wage earners employed all operators and operators of producing and of nonproducing mines separately, and gives the number of wage earners employed by each group. In many cases a single operator has several mines.

Table 38

WAGE EARNERS PER OPERATOR.	IRON MINES: 1909		
	Number of operators.	Wage earners.	
		Number.	Per cent distribution.
All mines	**191**	**52,983**	**100.0**
No wage earners	4		
Contract work	3		
1 to 5	16	53	0.1
6 to 20	34	421	0.8
21 to 50	41	1,510	2.8
51 to 100	25	1,939	3.7
101 to 500	50	11,611	21.9
501 to 1,000	9	7,132	13.5
Over 1,000	9	30,317	57.2
Producing mines	**176**	**52,230**	**100.0**
No wage earners	4		
Contract work	3		
Producing mines—Continued.			
1 to 5	12	39	0.1
6 to 20	30	374	0.7
21 to 50	36	1,227	2.3
51 to 100	24	1,742	3.3
101 to 500	49	11,399	21.8
501 to 1,000	9	7,132	13.7
Over 1,000	9	30,317	58.0
Nonproducing mines	**[1] 19**	**753**	**100.0**
1 to 5	4	14	1.9
6 to 20	4	47	6.2
21 to 50	7	261	34.7
Over 50 and less than 500	4	431	57.2

[1] Includes 4 operators who also operated producing mines.

Table 39 classifies, by districts, all operators (including nonproducing operators) according to the number of wage earners employed, and gives the number of wage earners employed by each group.

Table 39

WAGE EARNERS PER OPERATOR.	PRODUCING AND NONPRODUCING IRON MINES: 1909		
	Number of operators.	Wage earners.	
		Number.	Per cent distribution.
United States	[1] 181	52,983	100.0
No wage earners	4		
Contract work	3		
1 to 5	16	53	0.1
6 to 20	34	421	0.8
21 to 50	41	1,510	2.8
51 to 100	25	1,939	3.7
101 to 500	50	11,611	21.9
501 to 1,000	9	7,132	13.5
Over 1,000	9	30,317	57.2
Lake Superior district [2]	48	34,395	100.0
20 or less	6	61	0.2
21 to 50	8	243	0.7
51 to 100	3	231	0.7
101 to 500	21	4,950	14.4
Over 500	10	28,910	84.0
Southern district [3]	47	8,190	100.0
20 or less	7	91	1.1
21 to 50	12	399	4.9
51 to 100	11	876	10.7
101 to 500	13	2,920	35.6
Over 500	4	3,904	47.7
Other states [4]	101	10,398	100.0
No wage earners	4		
Contract work	3		
1 to 5	15	49	0.5
6 to 20	22	273	2.6
21 to 50	23	796	7.6
51 to 100	10	677	6.5
101 to 500	18	4,009	38.6
Over 500	6	4,594	44.2

[1] The difference of three between the total number of operators for the United States and the sum of the numbers for the districts and "Other states" is due to the elimination of the duplication in the United States total of those operators who had mines in more than one district.

[2] Embraces Michigan, Minnesota, and Wisconsin.

[3] Embraces Alabama, Georgia, and Tennessee.

[4] Embraces Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

The greatest degree of concentration was reported from the Lake Superior district, where 10 operators with over 500 wage earners each, employed 28,910, or over five-sixths of the total number of wage earners for that district. In the Southern district, and also in "Other states" taken together, between two-fifths and one-half of all wage earners were employed by operators employing more than 500 wage earners each. On the other hand, in each district, operators employing 20 wage earners or less reported but a small percentage of the total number employed.

Classification of operators according to value of products.—Table 40 classifies all operators of producing mines in 1909 according to value of products, and gives the value of products for each group.

As shown by the table, 15 operators, with an output valued at over $1,000,000 each, reported over 80 per cent of the total value of the products of iron mines, while operators with an output valued at less than $100,000 each reported less than 3 per cent of the total. In the Lake Superior district 13 operators, with products valued at $1,000,000 or more each, reported an aggregate output exceeding $85,000,000 in value, and representing 92.3 per cent of the total for the district. In the Southern district and in "Other states," however, operators with products less than $100,000 in value, contributed over one-sixth of the total product as measured by value.

Table 40

VALUE OF PRODUCTS PER OPERATOR.	IRON MINES: 1909		
	Number of operators.	Value of products.	
		Amount.	Per cent distribution.
United States	[1] 176	$106,947,082	100.0
Less than $1,000	21	11,007	([2])
$1,000 but less than $10,000	39	175,581	0.2
$10,000 but less than $100,000	63	2,647,340	2.5
$100,000 but less than $500,000	26	6,446,697	6.0
$500,000 but less than $1,000,000	12	7,577,126	7.1
$1,000,000 and over	15	90,089,331	84.2
Lake Superior district [3]	38	92,218,862	100.0
Less than $100,000	8	281,614	0.3
$100,000 but less than $500,000	11	2,701,133	2.9
$500,000 but less than $1,000,000	6	4,073,860	4.4
$1,000,000 and over	13	85,160,245	92.3
Southern district [4]	47	6,085,508	100.0
Less than $1,000	6	4,061	0.1
$1,000 but less than $10,000	11	54,980	0.9
$10,000 but less than $100,000	22	965,077	15.8
$100,000 but less than $500,000	5	1,155,211	19.0
$500,000 and over	4	3,906,199	64.2
Other states [5]	95	8,644,722	100.0
Less than $1,000	16	6,946	0.1
$1,000 but less than $10,000	28	117,698	1.4
$10,000 but less than $100,000	35	1,482,939	17.2
$100,000 but less than $500,000	11	3,030,533	35.0
$500,000 and over	5	4,006,608	46.3

[1] The difference of four between the total number of operators for the United States and the sum of the numbers for the districts and "Other states" is due to the elimination of the duplication in the United States total of those operators who had mines in more than one district.

[2] Less than one-tenth of 1 per cent.

[3] Embraces Michigan, Minnesota, and Wisconsin.

[4] Embraces Alabama, Georgia, and Tennessee.

[5] Embraces Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

Mines operated by proprietors who perform manual labor.—Notwithstanding the large scale on which iron mining is usually conducted, a few operators were reported who personally performed manual labor in the mines, and in some few cases they had no hired labor to assist them. The mines so operated were distributed among the following states: Missouri, 19; Maryland, 9, of which 4 were operated by the proprietors alone without hired labor; Ohio, 1; and Pennsylvania, 1. A summary of the statistics for mines of this class of operators is presented in Table 41.

Table 41

	PRODUCING IRON MINES OPERATED BY PROPRIETORS PERFORMING MANUAL LABOR: 1909		
	Total.	Without hired labor.	With hired labor.
Number of operators	16	4	12
Number of mines	30	4	26
Persons engaged in the industry	168	7	161
Proprietors and firm members	25	7	18
Number performing manual labor	24	7	17
Salaried employees	4		4
Wage earners	139		139
Primary horsepower owned	24		24
Capital	$79,540	$115	$79,425
Expenses of operation and development	$24,621	$205	$24,416
Salaries	$1,075		$1,075
Wages	$17,572		$17,572
Supplies and materials	$2,868	$26	$2,842
Royalties and rent of mines	$2,074	$154	$1,920
Taxes	$77		$77
Contract work	$50		$50
All other	$905	$25	$880
Products sold:			
Quantity (long tons)	12,095	373	11,722
Value	$24,920	$1,045	$23,875

As appears from the preceding table every proprietor of mines of this class except one performed some manual labor in the mines. In addition, such proprietors did nearly all of the supervisory and clerical work, only 4 salaried employees being employed by the 16 operators. There were 4 operators who performed the work connected with their mines without hired labor. Where wage earners were employed the average number was 12 per operator. These mines were operated practically without mechanical power, and most of them were in operation only a small part of the year. One operator ran his mines 30 days or less; 2 between 30 and 60 days; 1 between 60 and 90 days; 5 between 90 and 120 days; 2 between 120 and 150 days; 2 between 150 and 180 days; 2 between 180 and 210 days; and 1 between 240 and 270 days.

CHARACTER OF ORGANIZATION.

Comparative summary for the United States: 1909 and 1902.—Table 42 presents a comparative summary for producing operators by character of organization in 1909 and 1902. This table does not include one governmental institution for 1902; there were none reported for 1909.

Table 42

CHARACTER OF ORGANIZATION.	Census year.	PRODUCING IRON MINES: 1909 AND 1902							
		Number of mines.	Expenses of operation and development.						Value of products.
			Total.	Salaries.	Wages.	Supplies and materials.	Contract work.	All other.[1]	
Total[2]	1909	483	$74,071,830	$3,389,962	$29,731,456	$17,229,717	$2,698,842	$21,021,853	$106,947,082
	1902	524	41,294,525	2,109,807	21,531,792	8,973,168	422,044	8,257,714	65,460,985
Incorporated operators[3]	1909	417	73,751,594	3,374,806	29,551,434	17,152,414	2,674,798	20,998,142	106,581,936
	1902	392	39,606,977	2,000,456	20,504,967	8,538,596	418,176	8,144,782	63,303,407
Per cent of total	1909	86.3	99.6	99.6	99.4	99.6	99.1	99.9	99.7
	1902	74.8	95.9	94.8	95.2	95.2	99.1	98.6	96.7
Unincorporated operators	1909	66	320,236	15,156	180,022	77,303	24,044	23,711	365,146
	1902	132	1,687,548	109,351	1,026,825	434,572	3,868	112,932	2,157,578

[1] Includes interest in 1902, of which $521,111 was interest paid on bonds.

[2] Exclusive of governmental institutions.

[3] Includes 1 limited partnership and 1 cooperative association.

The corporate was the predominant form of organization in iron mines in both 1909 and 1902. During the seven years a marked absolute decrease occurred in the business of enterprises not under corporate control. Unincorporated operators reported in 1909 only a fraction of 1 per cent of the value of products.

General summary, by states: 1909.—Table 43 presents a general summary of the statistics for operators of producing mines, classified by character of organization, for the United States and for the principal states having both incorporated and unincorporated operators in 1909. In Connecticut, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New Mexico, North Carolina, Tennessee, Texas, Utah, Wisconsin, and Wyoming all the mines were operated by incorporated companies.

GENERAL SUMMARY FOR OPERATORS OF PRODUCING MINES, CLASSIFIED ACCORDING TO CHARACTER OF ORGANIZATION, FOR THE UNITED STATES AND FOR THE PRINCIPAL STATES HAVING BOTH INCORPORATED AND UNINCORPORATED OPERATORS: 1909.

Table 43

STATE AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of mines.	LAND CONTROLLED (ACRES).			Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.				
			Total.	Owned.	Leased.		Total.	Salaries.	Wages.	Supplies and materials.	Royalties and rent of mines.
United States:											
Incorporated[1]	130	417	1,274,785	1,038,623	236,162	$299,862,094	$73,751,594	$3,374,806	$29,551,434	$17,152,414	$15,166,190
Unincorporated	46	66	38,429	25,604	12,825	873,933	320,236	15,156	180,022	77,303	6,545
Alabama:											
Incorporated	20	46	57,901	53,134	4,767	22,370,318	4,604,857	322,087	2,687,855	1,096,335	89,351
Unincorporated	5	6	5,325	285	5,040	126,000	19,427	1,400	11,093	4,256	839
Georgia:											
Incorporated	6	12	72,343	72,153	190	3,997,192	277,235	32,710	141,448	72,778	16,893
Unincorporated	5	6	1,340	120	1,220	21,200	27,294	2,160	15,110	2,412	1,575
Missouri:											
Incorporated	6	9	89,503	89,120	383	3,016,000	105,835	9,495	66,729	16,420	10,576
Unincorporated	10	24	2,097	1,137	960	151,225	45,001	750	32,930	8,771	1,457
Pennsylvania:											
Incorporated[2]	9	12	5,659	864	4,795	7,053,458	282,308	20,179	139,705	70,423	1,480
Unincorporated	6	7	12,499	12,436	63	71,489	95,275	2,070	27,328	40,377	1,604
Virginia:											
Incorporated	12	53	95,295	58,255	37,040	6,323,807	1,478,382	55,094	817,308	323,659	146,877
Unincorporated	5	5	1,084	132	952	151,580	32,861	2,656	25,698	1,583	1,253

STATE AND CHARACTER OF ORGANIZATION.	EXPENSES OF OPERATION AND DEVELOPMENT—continued.			Ore used and sold (long tons).	Value of all products.	PERSONS ENGAGED IN INDUSTRY.						Primary horsepower owned.
							Proprietors and officials.					
	Taxes.	Contract work.	Rent of offices and sundries.			Aggregate.	Total.	Proprietors and firm members.	Salaried officers of corporations, superintendents and managers.	Clerks and other subordinate salaried employees.	Wage earners.	
United States:												
Incorporated[1]	$3,966,721	$2,874,798	$1,665,231	50,338,461	$106,681,936	54,149	1,019	....	1,019	1,825	51,305	338,975
Unincorporated	3,634	24,044	11,632	182,727	365,146	1,027	90	76	14	12	925	3,194
Alabama:												
Incorporated	36,962	3,950	368,317	4,297,467	4,915,743	5,874	171	....	171	184	5,519	31,101
Unincorporated	89	1,750	....	14,893	23,406	158	9	7	2	2	147	737
Georgia:												
Incorporated	3,045	....	10,361	204,780	308,324	696	21	....	21	13	662	3,345
Unincorporated	20	....	6,017	15,196	22,854	166	11	8	3	2	153	151
Missouri:												
Incorporated	262	654	1,699	58,996	140,022	212	7	....	7	6	199	255
Unincorporated	548	445	100	27,958	63,827	146	18	16	2	....	128	148
Pennsylvania:												
Incorporated[2]	18,097	30,285	2,139	623,699	692,454	635	15	....	15	8	612	3,171
Unincorporated	1,318	20,709	1,869	41,114	96,842	129	13	12	1	2	114	800
Virginia:												
Incorporated	16,329	700	118,415	825,647	1,657,857	3,029	36	....	36	38	2,955	6,130
Unincorporated	236	245	1,190	11,978	25,146	131	7	6	1	2	122	328

---

[1] Includes 1 cooperative association in Pennsylvania and 1 limited partnership in Tennessee.

[2] Includes 1 cooperative association.

Land tenure, by character of organization.—Table 44 presents statistics as to the land held by incorporated and unincorporated operators, respectively.

Of the total land reported (1,313,214 acres) 1,274,785 acres, or 97.1 per cent, were connected with the enterprises controlled by incorporated companies.

Table 44

TENURE AND CHARACTER OF LAND.	ACREAGE CONTROLLED BY OPERATORS OF PRODUCING IRON MINES: 1909		
	Total.	Incorporated.[1]	Unincorporated.
Total	1,313,214	1,274,785	38,429
Owned	1,064,227	1,038,623	25,604
Mineral	282,661	273,755	8,906
Timber	376,409	360,321	16,088
Other	405,157	404,647	610
Leased	249,987	236,162	12,825
Mineral	104,947	95,279	9,668
Timber	80,273	77,196	3,077
Other	63,767	63,687	80

---

[1] Includes 1 limited partnership and 1 cooperative association.

METHODS OF MINING.

Open-pit and underground mines.—The principal division of iron mines according to the method of mining is that between open-pit and underground mines. Table 45 shows the total production of ore (gross) in 1909 according to method of mining.

Table 45

STATE.	IRON ORE MINED (LONG TONS): 1909		
	Total.	Open-pit mines.	Underground mines.
United States	[1] **51,947,129**	[2] **24,150,491**	**27,796,638**
Alabama	4,687,468	1,128,984	3,558,484
Maryland	22,704	22,704	....
Michigan	11,992,693	319,681	11,673,012
Minnesota	29,127,918	19,869,105	9,258,813
New Jersey	536,958	....	536,958
New York	[1] 1,238,720	123,893	1,114,827
Pennsylvania	665,642	621,169	44,473
Tennessee	649,394	374,875	274,519
Utah	33,784	....	33,784
Virginia	841,709	570,677	271,032
All other states [3]	2,150,139	1,119,403	1,030,736

[1] This quantity represents crude ore as it came from the mine. A part of it was concentrated before shipment, the reduction in weight amounting to 229,209 tons.

[2] Includes a small quantity of ore (less than 1 per cent of the total output of the state) in Minnesota which was classified as "milling" ore by the operator.

[3] Embraces Georgia, Kentucky, Missouri, Nevada, New Mexico, Ohio, Texas, West Virginia, Wisconsin, and Wyoming for open-pit mines, and Colorado, Connecticut, Georgia, Massachusetts, Missouri, North Carolina, Ohio, and Wisconsin for underground mines.

It appears from the table that in the United States as a whole about one-half of the total production was contributed by open-pit mines, about five-sixths of this amount being produced in Minnesota.[1]

Table 46 gives a comparative summary of the statistics as to expenses and other subjects for open-pit and underground mines, for the United States as a whole and for the Lake Superior and Southern districts separately, so far as separate reports were secured. In a good many cases a single operator had both classes of mines and made only a combined report for both, except that the quantity mined by each method was distinguished. As the table comprises 385 of the 483 producing iron mines, with an aggregate output of 56.8 per cent of the total for the United States, the data may be regarded as fairly representative for each method of mining.

---

[1] The total production of open-pit mines in Minnesota included a small quantity of ore—less than 1 per cent of the total output of the state—which was classified as "milling" ore. Under the "milling" system the surface earth is removed, and the ore is thrown into drifts located below the top of the ore, thus making large sinks or craters.

SUMMARY FOR PRODUCING MINES, CLASSIFIED ACCORDING TO METHOD OF MINING, BY DISTRICTS: 1909.[1]

Table 46

	UNITED STATES.		LAKE SUPERIOR DISTRICT.		SOUTHERN DISTRICT.	
	Open-pit mines.	Underground mines.	Open-pit mines.	Underground mines.	Open-pit mines.	Underground mines.
Number of mines	175	210	23	110	57	42
Number of wage earners	9,045	30,136	1,863	20,130	3,445	4,463
Average number per mine	52	144	81	183	60	106
Primary horsepower owned	61,229	165,314	22,679	121,350	16,129	24,676
Capital	$46,412,586	$97,570,820	$18,033,857	$66,429,767	$11,547,985	$16,693,274
Expenses of operation and development	$7,822,656	$35,760,448	$3,694,325	$27,996,084	$1,955,061	$3,725,171
Services	$3,810,401	$19,317,982	$1,211,307	$14,419,214	$1,303,836	$2,438,749
Salaries	$435,761	$1,742,846	$161,595	$1,289,210	$167,977	$255,481
Wages	$3,374,640	$17,576,136	$1,049,712	$13,130,004	$1,135,859	$2,183,268
Supplies and materials	$1,581,166	$8,234,566	$586,353	$6,080,283	$453,061	$888,556
Royalties and rent of mines	$1,345,064	$5,194,624	$1,136,155	$5,050,772	$55,750	$73,002
Taxes	$388,919	$1,167,462	$324,584	$1,087,484	$20,133	$26,229
Contract work	$347,041	$569,122	$304,678	$526,966	$5,700	....
Miscellaneous	$350,065	$1,276,692	$131,248	$831,365	$116,581	$298,635
Ore used and sold (long tons)	8,601,936	20,075,010	4,866,570	14,775,431	1,700,040	3,430,778
Value of ore used and sold and of by-products	$11,745,593	$48,235,771	$6,633,315	$39,269,115	$2,341,922	$3,673,664
Ore mined:						
Quantity (long tons)	8,540,709	20,745,490	4,799,060	15,040,384	1,677,238	3,819,324
Estimated value [2]	$11,701,000	$49,789,000	$6,527,000	$40,007,000	$2,315,000	$4,087,000
Average tonnage per mine	48,804	98,788	208,655	136,731	29,425	90,936
Average expenses per ton mined	$0.92	$1.72	$0.77	$1.86	$1.16	$0.98
Salaries	0.05	0.08	0.03	0.09	0.10	0.07
Wages	0.40	0.85	0.22	0.87	0.68	0.57
Supplies and materials	0.19	0.40	0.12	0.40	0.27	0.23
Royalties and rent of mines	0.16	0.25	0.24	0.34	0.03	0.02
Taxes	0.05	0.06	0.07	0.07	0.01	0.01
Contract work	0.04	0.03	0.06	0.04	(3)	....
Miscellaneous	0.04	0.06	0.03	0.06	0.07	0.08

[1] Exclusive of operators using both methods of mining and making combined reports.

[2] This value has been estimated from the average value per ton at the mine of ore used and sold.

[3] Less than 1 cent.

The economy naturally resulting from open-pit mining appears from the table. For the United States as a whole the average wages per ton mined amounted to $0.40 for open-pit mines, as compared with $0.85 for underground mines, and the cost of supplies and materials averaged $0.19 per ton in open-pit mines and $0.40 per ton in underground mines. The differences appear in a still more marked degree when the Lake Superior district is considered by itself. In that district the average wages per ton for open-pit mines were about one-fourth, and the average expenses for supplies and materials less than one-third, of the corresponding averages for underground mines. In the Southern district, on the other hand, the average expenses for open-pit mines were somewhat higher than for underground mines.

Use of machinery in mining.—The increase in the production of iron ore has been due largely to the introduction of improved machinery, namely, steam shovels in open-pit mines and power drills in underground mines. Some mines, however, still use hand drills. A comparative summary of the principal data for mines classified according to the character of machinery used is presented in Table 47.

Table 47 CHARACTER OF MACHINERY USED.	PRODUCING IRON MINES: 1909				
	Number of mines.	Wage earners.	Capital.	Primary horsepower owned.	Ore mined (long tons).
Total	483	52,230	$300,735,917	342,069	51,947,129
Mines using:					
Steam shovels or power drills, or both	335	47,645	286,429,944	332,035	49,048,469
Hand drills, with mechanical power for other purposes	94	3,828	12,687,085	10,034	2,764,649
Hand drills, without mechanical power	54	757	1,618,888	....	134,011
Per cent of total reported for mines using:					
Steam shovels or power drills, or both	69.4	91.2	95.2	97.1	94.4
Hand drills, with mechanical power for other purposes	19.5	7.3	4.2	2.9	5.3
Hand drills, without mechanical power	11.2	1.4	0.5	....	0.3
Average per mine for mines using:					
Total	......	108	$622,642	708	107,551
Steam shovels or power drills, or both	......	142	855,015	991	146,413
Hand drills, with mechanical power for other purposes	......	41	134,969	107	29,411
Hand drills, without mechanical power	......	14	29,979	....	2,482

The preceding table shows that steam shovels or power drills or both were used in about seven-tenths of the iron mines, and that these mines produced 94.4 per cent of the ore mined and gave employment to 91.2 per cent of all wage earners engaged in iron mining. Hand drilling exclusively was reported from 30.6 per cent of all mines, but their production formed only 5.6 per cent of the total ore mined and the wage earners employed by them constituted only 8.7 per cent of the total number of wage earners engaged in the industry. The mines using hand drills and without mechanical power for other purposes were all small mines, their average output being less than 2,500 tons in 1909. These mines produced only 0.3 per cent of the total quantity of ore mined in 1909 and gave employment to 1.4 per cent of the total number of wage earners engaged in iron mining.

Mines using steam shovels.—Table 48 gives a summary for open-pit mines using exclusively steam shovels for shoveling ore. This table does not include the statistics of open-pit mines which were operated under the same management as underground mines and were not reported separately. A comparative study of the principal items of expense shows that the average wages per ton mined were $0.48 for open-pit mines using steam shovels, as compared with an average of $0.57 per ton for all producing mines, open-pit and underground; and that the average cost of supplies and materials per ton of ore mined by steam shovels was $0.23, as compared with $0.33 per ton for all producing mines.

Table 48	Number or amount.
Number of operators	37
Number of mines	59
Number of wage earners, Dec. 15, 1909, or nearest representative day:	
Total	4,475
Average per mine	76
Primary horsepower owned:	
Total	17,351
Average per mine	294
Capital:	
Total	$25,797,420
Average per mine	$437,244
Expenses of operation and development	$3,776,517
Services	$1,919,201
Salaries	$220,085
Wages	$1,699,116
Supplies and materials	$816,669
Royalties and rent of minee	$577,138
All other	$463,509
Quantity of ore mined (long tons):	
Total	3,511,770
Average per mine	59,522
Value of products used and sold	$5,937,373

Mines without mechanical power.—A survival of the primitive methods of mining appears in the case of 54 mines in which, in 1909, all the drilling was done by hand and no power was used for hoisting or other purposes. While the value of the total output of these mines was less than $250,000, yet they are of interest as affording a comparison between modern methods of mining and those of an earlier day. The amount of wages per ton mined in these 54 mines averaged $1.10, as compared with $0.48 per ton for mines using exclusively steam shovels for shoveling ore, and with $0.57 for all producing mines. The cost of supplies for these 54 mines averaged $0.41 per ton, as compared with $0.23 per ton for the mines using steam shovels covered by Table 48, and with $0.33 for all producing mines.

A summary of the statistics for mines without mechanical power is presented in Table 49.

Table 49	Number or amount.
Number of operators	48
Number of mines	54
Number of wage earners, Dec. 15, 1909, or nearest representative day:	
Total	757
Average per mine	14
Capital:	
Total	$1,618,888
Average per mine	$29,979
Expenses of operation and development	$256,183
Services	$169,010
Salaries	$21,263
Wages	$147,747
Supplies and materials	$55,212
Royalties and rent of mines	$5,297
All other	$26,664
Quantity of ore mined (long tons):	
Total	134,011
Average per mine	2,482
Value of products used and sold	$248,073

GENERAL TABLE.

Table 50 contains a detailed presentation, for 1909, of the statistics for iron mines in the United States as a whole, in each of the main producing districts, and in each state of any importance in the industry. It shows separately those mines which produced ore in 1909, and those in which all operations were confined to development work. It gives the number of operators and of mines; the acreage of land controlled, according to tenure; the expenses of operation and development; the quantity and value of products; and detailed statistics with regard to persons engaged in the industry and with regard to power and machinery.

Table 50

	DISTRICT AND STATE.	Number of operators.	Number of mines.	LAND CONTROLLED (ACRES).											
				All land.			Mineral land.			Timber land.			Other land.		
				Total.	Owned.	Leased.	Total.	Owned.	Leased.	Total.	Owned.	Leased.	Total.	Owned.	Leased.
1	**All mines**	[3] 191	504	1,343,634	1,087,865	255,769	416,016	306,257	109,759	456,682	376,409	80,273	470,936	405,199	65,737
2	**Producing**	[5] 176	483	1,313,214	1,064,227	248,987	387,608	282,661	104,947	456,682	376,409	80,273	468,924	405,157	63,767
3	**Nonproducing**	[6] 19	21	30,420	23,638	6,782	28,408	23,596	4,812	....	....	....	2,012	42	1,970
	Producing:														
4	LAKE SUPERIOR DIST.	50	195	600,283	442,428	157,855	39,624	13,338	26,286	252,713	181,517	71,196	307,946	247,573	60,373
5	Michigan	24	83	247,656	223,419	24,237	17,205	4,464	12,741	162,248	154,384	7,864	68,203	64,571	3,632
6	Minnesota	20	101	332,233	201,386	130,847	14,336	2,510	11,826	86,302	22,970	63,332	231,595	175,906	55,689
7	Wisconsin	6	11	20,394	17,623	2,771	8,083	6,364	1,719	4,163	4,163	....	8,148	7,096	1,052
8	SOUTHERN DISTRICT	51	116	212,165	190,699	21,466	136,820	121,498	15,322	25,996	19,996	6,000	49,349	49,205	144
9	Alabama	25	52	63,226	53,419	9,807	52,000	42,337	9,663	4,746	4,746	....	6,480	6,336	144
10	Georgia	11	18	73,683	72,273	1,410	70,570	69,160	1,410	....	....	....	3,113	3,113	....
11	Tennessee	15	46	75,256	65,007	10,249	14,250	10,001	4,249	21,250	15,250	6,000	39,756	39,756	....
12	OTHER STATES	100	172	500,766	431,100	69,666	211,164	147,825	63,339	177,973	174,896	3,077	111,629	108,379	3,250
13	Maryland	12	13	10,580	10,490	90	180	90	90	10,000	10,000	....	400	400	....
14	Missouri	16	33	91,600	90,257	1,343	12,353	11,167	1,186	957	880	77	78,290	78,210	80
15	New Jersey	8	10	13,668	5,169	8,499	12,968	4,469	8,499	660	660	....	40	40	....
16	New York	14	19	247,783	239,564	8,219	95,920	87,701	8,219	131,633	131,633	....	20,230	20,230	....
17	Ohio	4	4	4,390	4,310	80	4,390	4,310	80	....	....	....	....	....	....
18	Pennsylvania	15	19	18,158	13,300	4,858	12,089	7,231	4,858	6,065	6,065	....	4	4	....
19	Utah	3	5	268	268	....	268	268	....	....	....	....	....	....	....
20	Virginia	17	58	96,379	58,387	37,992	64,206	26,384	37,822	22,953	22,953	....	9,220	9,050	170
21	All other [7]	11	11	17,940	9,355	8,585	8,790	6,205	2,585	5,705	2,705	3,000	3,445	445	3,000
	Nonproducing:														
22	Minnesota	8	9	1,589	200	1,389	1,469	200	1,269	....	....	....	120	....	120
23	Missouri	3	4	24,368	21,168	3,200	24,368	21,168	3,200	....	....	....	....	....	....
24	All other [8]	8	8	4,463	2,270	2,193	2,571	2,228	343	....	....	....	1,892	42	1,850

	DISTRICT AND STATE.	PERSONS ENGAGED IN INDUSTRY.																						
		Aggregate.	Proprietors and officials.			Clerks and other subordinate salaried employees.	Wage earners, December 15, or nearest representative day.																	
							Aggregate.			Men 16 years of age and over.												Boys under 16 years of age.		
										All classes.			Engineers, firemen, and mechanics.			Miners and miners' helpers.			Other wage earners.					
			Total.	Proprietors and firm members.	Salaried officers of corporations, superintendents, and managers.		Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.
1	**All mines**	55,980	1,132	81	1,051	1,865	52,883	25,453	27,530	52,494	25,133	27,361	7,270	6,783	487	25,191	4,854	20,337	20,033	13,496	6,537	489	320	169
2	**Producing**	55,176	1,109	76	1,033	1,837	52,230	24,889	27,341	51,741	24,569	27,172	7,073	6,597	476	24,926	4,736	20,190	19,742	13,236	6,506	489	320	169
3	**Nonproducing**	804	23	5	18	28	753	564	189	753	564	189	197	186	11	265	118	147	291	260	31	....	....	....
	Producing:																							
4	LAKE SUPERIOR DIST.	35,886	660	....	660	1,428	33,798	14,357	19,441	33,773	14,345	19,428	4,515	4,286	229	14,349	446	13,903	14,909	9,613	5,296	25	12	13
5	Michigan	16,931	312	....	312	494	16,125	4,665	11,460	16,104	4,657	11,447	1,705	1,544	161	7,853	87	7,766	6,546	3,026	3,520	21	8	13
6	Minnesota	17,438	330	....	330	890	16,218	9,280	6,938	16,214	9,276	6,938	2,660	2,610	50	5,625	289	5,336	7,929	6,377	1,552	4	4	....
7	Wisconsin	1,517	18	....	18	44	1,455	412	1,043	1,455	412	1,043	150	132	18	871	70	801	434	210	224	....	....	....
8	SOUTHERN DISTRICT	8,629	250	15	235	239	8,140	4,894	3,246	7,769	4,662	3,107	1,230	1,100	130	3,840	1,436	2,404	2,699	2,126	573	371	232	139
9	Alabama	6,032	180	7	173	186	5,666	3,044	2,622	5,404	2,907	2,497	972	845	127	2,391	528	1,863	2,041	1,534	507	262	137	125
10	Georgia	862	32	8	24	15	815	750	65	788	723	65	101	101	....	358	293	65	329	329	....	27	27	....
11	Tennessee	1,735	38	....	38	38	1,659	1,100	559	1,577	1,032	545	157	154	3	1,091	615	476	329	263	66	82	68	14
12	OTHER STATES	10,661	199	61	138	170	10,292	5,638	4,654	10,199	5,562	4,637	1,328	1,211	117	6,737	2,854	3,883	2,134	1,497	637	93	76	17
13	Maryland	146	20	18	2	1	125	125	....	114	114	....	6	6	....	65	65	....	43	43	....	11	11	....
14	Missouri	358	25	16	9	6	327	284	43	324	281	43	15	15	....	281	238	43	28	28	....	3	3	....
15	New Jersey	2,148	23	....	23	30	2,095	553	1,542	2,095	553	1,542	302	249	53	1,134	....	1,134	659	304	355	....	....	....
16	New York	2,637	34	1	33	61	2,542	1,049	1,493	2,541	1,049	1,492	356	322	34	1,400	158	1,242	785	569	216	1	....	1
17	Ohio	39	3	2	1	....	36	19	17	36	19	17	1	1	....	26	9	17	9	9	....	....	....	....
18	Pennsylvania	764	28	12	16	10	726	620	106	714	608	106	161	159	2	478	400	78	75	49	26	12	12	....
19	Utah	81	3	....	3	3	75	12	63	75	12	63	12	12	....	63	....	63	....	....	....	....	....	....
20	Virginia	3,160	43	6	37	40	3,077	2,232	845	3,011	2,182	829	363	349	14	2,346	1,562	784	302	271	31	66	50	16
21	All other [7]	1,328	20	6	14	19	1,289	744	545	1,289	744	545	112	98	14	944	422	522	233	224	9	....	....	....
	Nonproducing:																							
22	Minnesota	559	13	2	11	20	526	380	146	526	380	146	139	134	5	186	62	124	191	184	17	....	....	....
23	Missouri	54	3	2	1	1	50	46	4	50	46	4	4	4	....	44	40	4	2	2	....	....	....	....
24	All other [8]	191	7	1	6	7	177	138	39	177	138	39	54	48	6	35	16	19	98	74	14	....	....	....

---

[1] Includes a small amount reported for rent of power, which forms approximately 1 per cent of the total.

[2] Includes by-products with value of $407,508, of which the greater part was manganiferous ore.

[3] The difference of 4 existing between the number of operators for all mines and the sum of the numbers for producing and nonproducing mines is due to the fact that 4 operators reported both classes of mines.

[4] Of this ore, 882,548 tons were concentrated at the mines, from which 653,339 tons of concentrate were derived.

[5] The difference of 25 existing between the number of operators for producing mines and the sum of the numbers for the several states, is due to the elimination of the duplication in the United States total of those operators who had mines in more than one state.

DISTRICTS AND STATES: 1909.

	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.											PER CENT OF TOTAL.			ORE.		
		Total.	Services.			Supplies.		Miscellaneous.				Services.	Supplies.	Miscellaneous.	Total mined (long tons).	Used, shipped, and sold.	
			Salaries.		Wages.	Supplies and materials.	Fuel.[1]	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and sundries.					Quantity (long tons).	Value, including by-products.[2]
			Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.													
1	$305,386,756	$74,934,131	$1,768,067	$1,655,935	$30,047,986	$12,835,310	$4,716,863	$15,210,335	$4,004,310	$2,762,617	$1,933,609	44.7	23.4	31.9	[4] 51,947,129	50,521,208	$106,947,082
2	300,735,917	74,071,830	1,749,989	1,639,973	29,731,456	12,597,428	4,632,289	15,174,735	3,970,356	2,698,842	1,876,763	44.7	23.3	32.0	[4] 51,947,129	50,521,208	106,947,082
3	4,650,839	863,301	18,068	15,962	316,630	237,882	83,674	35,600	33,964	63,775	56,846	40.7	37.3	22.0	....	....	....
4	237,386,821	61,552,979	1,284,163	1,344,826	22,607,698	10,359,986	3,541,036	14,784,131	3,818,377	2,613,823	1,198,939	41.0	22.6	36.4	42,095,627	41,242,374	92,216,852
5	58,544,068	22,459,011	645,761	451,127	10,668,069	3,452,519	1,457,460	3,827,852	961,401	436,148	558,674	52.4	21.9	25.7	11,992,693	11,924,995	32,168,133
6	174,863,024	37,295,373	609,187	852,393	11,068,652	6,597,440	1,951,421	10,686,407	2,810,266	2,157,075	562,532	33.6	22.9	43.5	29,127,918	28,314,713	57,076,135
7	3,979,729	1,798,595	29,215	41,306	870,977	310,027	132,155	269,872	46,710	20,600	77,733	52.3	24.6	23.1	975,016	1,002,666	2,972,584
8	28,475,259	5,762,991	243,777	184,266	3,369,697	872,102	484,854	136,723	46,979	5,700	418,893	65.9	23.5	10.6	5,556,838	5,181,605	6,085,508
9	22,496,318	4,624,284	176,678	146,809	2,698,948	718,281	382,310	90,190	37,051	5,700	368,317	65.4	23.8	10.8	4,687,468	4,312,360	4,939,149
10	4,018,392	304,529	25,610	9,260	156,558	40,665	34,525	18,468	3,065	....	16,378	62.9	24.7	12.4	219,976	219,976	331,178
11	1,960,549	834,178	41,489	28,197	514,191	113,156	68,019	28,065	6,863	....	34,198	70.0	21.7	8.3	649,394	649,269	815,181
12	34,873,837	6,755,860	222,049	110,881	3,754,061	1,365,340	606,399	253,881	104,999	79,319	258,931	60.5	29.2	10.3	4,294,664	4,097,229	8,644,722
13	62,658	41,106	2,520	810	24,989	3,893	4,610	1,343	582	395	1,964	68.9	20.7	10.4	22,704	22,675	44,341
14	3,167,225	150,836	6,325	3,920	99,659	15,984	9,207	12,033	810	1,099	1,799	72.9	16.7	10.4	87,079	86,954	203,849
15	3,612,024	1,321,915	49,798	16,251	840,967	199,707	168,368	7,091	7,350	....	32,383	68.6	27.9	3.5	536,958	559,828	1,651,091
16	12,613,215	2,118,267	81,987	57,223	1,001,025	556,997	199,817	62,668	51,491	20,632	86,427	53.8	35.7	10.5	[4]1,238,720	1,024,173	3,095,023
17	53,401	22,701	1,320	....	11,510	3,225	....	176	389	5,254	827	56.5	14.2	29.3	13,468	13,468	24,419
18	7,124,947	377,583	17,841	4,408	167,033	87,340	23,460	3,084	19,415	50,994	4,008	50.1	29.4	20.5	665,642	664,813	789,296
19	206,077	185,429	1,000	1,050	104,823	72,834	5,160	....	502	....	60	57.6	42.1	0.3	33,784	33,784	100,844
20	6,475,387	1,511,243	39,438	18,312	843,006	208,213	117,029	148,130	16,565	945	119,605	59.6	21.5	18.9	841,709	837,625	1,683,003
21	1,558,903	1,026,780	21,820	8,907	661,049	217,147	78,748	19,356	7,895	....	11,858	67.4	28.8	3.8	854,600	853,909	1,052,856
22	2,274,826	630,425	9,918	12,722	251,564	156,167	67,050	33,750	26,982	34,900	37,372	43.5	35.4	21.1	....	....	....
23	1,006,900	15,352	900	300	6,544	1,652	595	....	1,163	20	4,278	50.4	14.0	35.6	....	....	....
24	1,569,113	216,524	7,250	2,940	58,422	80,163	16,029	1,850	5,819	28,855	15,196	31.7	44.4	23.9	....	....	....

	PERSONS ENGAGED IN INDUSTRY—continued.												PRIMARY POWER OWNED.							ELECTRIC MOTORS RUN BY CURRENT GENERATED BY THE ENTERPRISE USING.		MACHINERY.		
	Wage earners employed 15th day of—												Total horsepower.	Steam engines.		Gas or gasoline engines.		Water wheels.				Power drills (number).		Steam shovels (number).
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Compressed air.	Other.	
1	43,746	44,373	44,795	43,887	46,029	46,589	48,254	49,326	50,748	51,639	51,654	51,326	345,540	3,610	329,784	29	3,091	[9] 30	[9]12,665	335	13,642	3,082	70	321
2	43,491	44,076	44,446	43,580	45,712	46,233	47,794	48,763	50,191	51,055	51,031	50,574	342,069	3,563	326,753	27	2,651	[9] 30	[9]12,665	326	13,295	3,061	63	319
3	255	297	348	317	317	356	460	563	557	584	623	752	3,471	47	3,031	2	440	....	....	9	347	21	7	2
4	28,069	28,768	28,866	28,386	30,863	31,327	32,235	32,533	33,228	33,912	33,645	32,909	262,305	2,739	249,986	11	109	24	12,210	271	11,687	1,832	21	209
5	14,351	14,456	14,557	14,128	14,476	14,656	15,020	15,145	15,494	15,803	15,734	16,052	108,262	1,205	96,017	4	35	24	12,210	149	7,341	1,395	4	51
6	12,679	13,046	13,065	13,109	15,199	15,529	15,947	16,084	16,324	16,740	16,465	15,550	145,068	1,412	145,010	5	58	....	....	121	4,338	318	13	152
7	1,039	1,266	1,244	1,149	1,188	1,142	1,268	1,304	1,410	1,369	1,446	1,307	8,975	122	8,959	2	16	....	....	1	8	119	4	6
8	7,019	6,680	6,975	6,753	6,615	6,470	6,867	7,110	7,382	7,568	7,756	7,743	40,915	383	40,905	1	10	....	....	7	75	730	3	62
9	5,055	4,811	5,117	5,189	5,026	4,760	5,027	5,129	5,350	5,515	5,652	5,486	31,838	268	31,838	....	....	....	....	6	50	670	....	39
10	504	513	491	428	380	427	418	506	527	551	603	734	3,496	41	3,496	....	....	....	....	....	....	7	....	10
11	1,460	1,356	1,367	1,136	1,209	1,283	1,422	1,475	1,505	1,502	1,501	1,523	5,581	74	5,571	1	10	....	....	1	25	53	3	13
12	8,403	8,628	8,605	8,441	8,234	8,436	8,692	9,120	9,681	9,575	9,630	9,922	38,849	441	35,862	15	2,532	6	455	48	1,533	499	39	48
13	110	106	111	110	117	119	114	120	121	125	125	128	391	8	391	....	....	....	....	....	....	....	....	2
14	207	220	245	260	235	297	228	208	244	198	173	243	403	13	391	1	12	....	....	....	....	....	6	2
15	2,017	2,057	1,980	1,794	1,749	1,780	1,840	1,818	2,014	2,130	2,111	2,095	6,585	82	6,585	....	....	....	....	10	525	129	....	....
16	1,885	1,922	1,909	1,832	1,792	1,884	2,008	2,175	2,333	2,353	2,387	2,510	18,220	124	17,223	6	747	2	250	30	966	192	20	7
17	26	27	33	34	34	31	31	31	35	33	31	31	....	....	....	....	....	....	....	....	....	....	....	....
18	533	508	437	513	468	491	508	531	509	648	637	696	3,971	38	2,257	4	1,714	....	....	....	....	18	....	8
19	75	75	75	75	67	67	67	67	67	67	48	48	200	2	200	....	....	....	....	....	....	8	....	....
20	2,590	2,688	2,793	2,733	2,662	2,605	2,703	2,950	3,019	2,753	2,837	2,932	6,458	141	6,200	3	53	[9] 4	[9] 205	1	20	74	9	25
21	960	1,025	1,022	1,090	1,110	1,162	1,193	1,220	1,239	1,268	1,281	1,239	2,621	33	2,615	1	6	....	....	7	22	78	4	4
22	183	205	220	225	221	246	260	292	339	352	385	534	1,724	31	1,724	....	....	....	....	....	....	17	6	2
23	4	7	6	....	....	....	84	105	52	74	62	48	102	2	102	....	....	....	....	....	....	....	1	....
24	68	85	123	92	96	110	116	166	166	158	176	170	1,645	14	1,205	2	440	....	....	9	347	4	....	....

---

[6] Includes 4 operators who are also included in the number shown for producing mines.

[7] Embraces Colorado, Connecticut, Kentucky, Massachusetts, Nevada, New Mexico, Nortb Carolina, Texas, West Virginia, and Wyoming.

[8] Embraces Iowa, Michigan, Pennsylvania, Tennessee, Utah, Virginia, and Wisconsin.

[9] Includes 1 water motor of 115 horsepower.

*

CHAPTER VI.

PETROLEUM AND NATURAL GAS.

INTRODUCTION.

Arrangement of report.—This report is arranged in five parts. Part I treats of the industry as a whole; Part II covers the supplementary data for the petroleum branch of the industry—that is, that in which petroleum was the principal product; Part III deals with the supplementary data for the natural gas branch of the industry, in which the principal product was natural gas; Part IV contains statistics for those operators who reported oil wells only or gas wells only; and Part V presents five general tables containing the statistics of petroleum and natural gas enterprises from which the special tables of Parts I, II, and III are derived.

Definitions and explanations.—In order that the text and tables of this report may be entirely clear, the following definitions and explanations of terms used are submitted:

Scope of census.—The statistics of petroleum and natural gas refer to the United States exclusive of all outlying possessions.

The census returns cover enterprises engaged in three general classes of operations. First, those which confined their operations entirely to the production of either petroleum or natural gas or of both; second, those which produced petroleum or natural gas and were also engaged in the drilling of new wells; and, third, those which were engaged in the drilling of new wells only, and which reported no products for the year.

Reports were obtained for all enterprises that were operating or drilling wells during any portion of the census year. Operators whose wells were idle during the entire year 1909 were omitted from the canvass.

Period covered.—The returns cover the calendar year 1909, or the business year which corresponded most nearly to that calendar year. The statistics include a year's operations for all enterprises except those whose wells were shut down during a portion of the year, in which case, of course, the returns cover only that part of the year during which the enterprises were active.

Number of operators.—In determining the number of operators' subsidiary companies have not been considered as separate operators, but each holding or owning company, together with all its subsidiary concerns, has been counted as one operator. There were certain operators who reported enterprises in two or more states or fields. In making up the total for the United States these duplications have been eliminated, but in making up the totals for each state and each field every enterprise has been counted as an operator wherever it appeared.

Persons engaged in the industry.—The statistics of the number of proprietors and firm members, salaried employees, and wage earners are based on the returns for December 15, 1909, or the nearest representative day. The wage earners reported include "bosses" performing work similar to that of the men over whom they had charge, but foremen whose duties were wholly supervisory are included among salaried employees.

Oil and gas land controlled.—The acreage of oil and gas land shown covers the holdings of none but operating concerns, which include both those engaged in production and those engaged in the drilling of new wells; since the operators reported their total land holdings, however, the acreage given includes large areas not actually producing or in process of development, but held in reserve for future development.

Capital.—Operators were required to report the total amount of capital, both owned and borrowed, which they had invested in the business on the last day of the business year. This includes the operator's investment in property owned, together with cash on hand, operating accounts, and bills receivable. The value of lands, buildings, and equipment held under lease is not included in the amount reported, but the capital reported does cover the value of the leases themselves. Owing to the diversity of methods of bookkeeping in use by different companies, and to the fact that some operators apparently reported capital stock at par value instead of actual capital invested, as well as to the further fact that in some cases the returns included investments in large areas of reserve oil and gas lands, the returns for capital lack uniformity and can be used only to show very general conditions.

Expenses.—The expenses reported include all direct expenses of the operation of producing wells and of the drilling of new wells. Interest payments are not included, nor has any direct allowance been made for depreciation.

In the production of petroleum and natural gas, depreciation is of two kinds: (1) The gradual destruction of the investment in oil and gas land, due to the flow of the supply of oil and gas; (2) the gradual destruction of the investment in the development of the wells, due partly to the deterioration of equipment and construction, and partly to the fact that wells lose all their value when the oil and gas are exhausted.

For wells operated on leased lands, depreciation of the first kind is more than fully covered in the census returns by the royalties paid by the operators and included in the reported expenses; but for wells operated on lands owned by the operators it is not covered by any item. While depreciation of the second kind is not included in the reports of any wells, it should be borne in mind that the operators did include expenditures for permanent improvements, betterments, and replacements made during the year, which may in part offset the depreciation in the equipment of wells.

Salaries.—Except as explained in the following paragraph, the amount of salaries shown includes all payments to officials, superintendents, managers, and salaried employees in general offices, as well as the payments to salaried employees at the wells.

Administrative expenses of general offices.—Occasionally a company operating oil and gas wells in more than one state or field reported the expenses of its general office as a total and did not apportion these expenses among its different wells, or even among the different states or fields covered by its operations. States affected by returns of this kind for oil and gas operators were California, Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia. All the different fields, except those designated as "Other fields," were similarly affected. In order to show the total expenses for the wells of the states and fields mentioned, it was necessary to distribute these administrative expenses among the states and fields by estimate. It was not thought desirable, however, to include under the heading of "Salaries" the salary payments thus distributed, since the number of employees of general offices to whom these salaries were paid could not be conveniently distributed by states and fields. Accordingly, the distribution was made as follows: The total expenses of each general office were apportioned as a single item among the wells of that company in the proportion which the total of the expenses separately reported for each well bore to the aggregate for all wells of the company, and the amount so assigned to each well was included in the item "Sundries," under "Miscellaneous expenses." Consequently, the total amount of salaries appearing as such in the statistics for the several states and fields mentioned, is slightly less than it should be, while the total for miscellaneous expenses is correspondingly exaggerated. These apportioned items are relatively small, however, so that the statistics for each state and field are approximately correct. In the totals for the United States, the number of general office employees, their salaries, and other general office expenditures are included under the proper heads.

This method of distributing the expenses of these general administrative offices necessarily affects somewhat the percentage distribution of the total expenses by specific items in the states and fields involved. The absolute amount of these administrative expenses in most cases was so small, however, that the variations in the percentages were slight; and although these percentages are not entirely accurate, they are of sufficient value to justify their inclusion in the general tables.

The same method of distributing administrative expenses among the fields and states was also employed in compiling those tables in which enterprises were divided into various classes. Thus, in the classes "Production only" and "Production and drilling of new wells," these administrative expenses are included in "Miscellaneous expenses," and they have been similarly treated in the tables which classify the industry according to the principal product.

Wages.—Small operators usually find it possible to dispense with the services of regular wage earners by hiring an independent mechanic for a few hours during the week. There is a class of mechanics in the oil fields who make it a specialty to work by the job for a number of operators. In several tables the compensation of these part-time employees is included in the cost of contract work, while in others, where the data are given in greater detail, such compensation is shown as a separate item.

Supplies.—This item includes the cost of all supplies and materials used during the year in connection with the operation or drilling of wells, as follows: Lumber and timber used for new construction and repairs, derricks, trestles, and all other purposes iron and steel for blacksmithing, piping, casing, renewals and repairs of tools; water for boilers and other purposes; machinery supplies; etc. It also includes the cost of fuel, of power rented, and of purchased gas. In several tables the cost of purchased gas is included with supplies and materials, while in others, where the data are given in greater detail, this item is shown separately.

Miscellaneous expenses.—Except as already explained under "Administrative expenses of general offices," the figures for miscellaneous expenses include royalties and rent of wells, taxes, cost of contract work, rent of offices and buildings other than at wells, payments for use of patents, insurance, ordinary repairs to buildings and machinery, advertising, damages, traveling expenses, and all other sundry expenses.

Primary horsepower.—This item represents the total primary power generated by the enterprises reporting plus the amount of power rented from other concerns. It does not include the horsepower of electric motors run by current generated by the enterprises themselves the inclusion of which would obviously result in duplication.

PART I.—THE INDUSTRY AS A WHOLE.

GENERAL SUMMARY FOR THE UNITED STATES.

The Thirteenth Census is the first at which a general canvass of operators of petroleum and natural gas wells has been made. At the special census of mines and quarries for 1902, the Standard Oil Company supplied most of the information secured regarding this industry. "There were in all 7 schedules received from the company, which contained the statistics for 28,925 producers and 112,794 wells. In addition to the reports of the Standard Oil Company, there were 604 schedules received from 597 producers covering the operations of 5,877 wells. The 7 schedules from the Standard Oil Company covered 98 per cent of the producers and 95 per cent of the wells reported for the United States. Similar reports were made by the company for its production of natural gas, 4 schedules being received for 19 producers and 1,701 wells in Pennsylvania, New York, Ohio, and West Virginia, the producers forming 1 per cent and the wells 10.8 per cent of the total for the United States."[1]

The number of operators of petroleum and natural gas wells from whom individual reports were received in 1902, was 2,545.[2] On the other hand, the total number of operators from whom complete reports were secured for the year 1909 was 7,793.

Summary for producing and nonproducing enterprises: 1909.—Table 1 presents the general statistics for 1909 of operators in the petroleum and natural gas industry.

---

[1] Special Report of the Census: Mines and Quarries, 1902, page 20.

[2] Exclusive of the Standard Oil Company, but including 17 operators who reported wells operated by municipalities and eleemosynary institutions. Special Report on Mines and Quarries, page 64, Table 19.

Table 1	PRODUCING AND NONPRODUCING ENTERPRISES: 1909			
	Total.	Producing enterprises.		Nonproducing enterprises.
		Production only.	Production and drilling of new wells.	
Number of operators	[1] 8,053	5,206	2,736	260
Persons engaged in industry	[2] 64,089	16,528	45,390	1,917
Proprietors and firm members	16,420	10,743	5,470	207
Number performing manual labor	2,174	1,562	593	19
Salaried officers of corporations, superintendents, and managers	[2] 3,329	798	2,274	189
Clerks and other subordinate salaried employees	[2] 3,058	592	2,210	70
Wage earners, Dec. 15, 1909, or nearest representative day	41,282	4,395	35,436	1,451
Wells:				
Completed Dec. 31, 1909	166,448	56,265	110,055	128
Drilled in 1909	15,612	1	15,411	200
Productive	13,183		13,076	107
Dry	2,429	1	2,335	93
Abandoned in 1909	5,872	1,401	4,470	1
Land controlled, acres:				
Net	13,809,939	1,083,213	11,611,625	1,115,101
Owned	762.276	207,184	479,084	76,008
Held under lease	13,047,663	876,029	11,132,541	1,039,093
Sublet	1,377,652	113,647	1,263,579	426
Gross	15,187,591	1,196,860	12,875,204	1,115,527
Primary horsepower	1,230,546	286,782	935,187	8,577
Capital	[3] $697,434,811	$104,311,432	$571,267,551	$14,166,314
Expenses of operation and development	$142,683,027	$14,346,947	$121,291,697	$7,044,383
Services	[4] $35,552,612	$3,964,107	$29,963,201	$1,219,081
Salaried officers of corporations, superintendents, and managers	[4] $5,039,379	$700,557	$3,905,303	$191,155
Clerks and other subordinate salaried employees	[4] $2,419,200	$389,723	$1,840,075	$25,543
Wage earners	$28,094,033	$2,873,827	$24,217,823	$1,002,383
Supplies, fuel, and rent of power	$46,527,924	$1,737,840	$39,653,768	$5,136,316
Purchased gas	$9,888,877	$4,248,706	$5,640,171	
Miscellaneous	[4] $50,713,614	$4,396,294	$46,034,557	$688,986
Royalties and rent of wells	$21,347,500	$2,356,683	$18,926,137	$64,680
Part-time work	$1,038,366	$623,222	$412,424	$2,720
Contract work	[4] $16,001,306	$187,110	$15,406,495	$300,442
Rent of offices and other sundry expenses	[4] $12,326,442	$1,229,279	$11,289,501	$321,144
Products:				
Total value [5]	[6] $135,416,684	$28,463,089	$156,953,595	
Petroleum—				
Barrels (42 gals.)	171,559,394	24,327,036	147,232,358	
Value at well	$117,696,529	$18,293,193	$99,403,336	
Natural gas—				
M cubic feet	[6] 559,800,490	65,280,711	494,519,779	
Value at well	[5] $67,605,397	$10,138,677	$57,466,720	
Average per operator:				
Wells completed Dec. 31, 1909	21	11	40	(7)
Land controlled, gross acreage	1,886	230	4,706	4,290
Wage earners	5	1	13	6
Primary borsepower	153	55	342	33
Value of products	$23,793	$5,467	$57,366	

[1] Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

[2] The following numbers which could not be distributed by classes are properly credited in the total: Persons engaged in industry, 254; salaried officers of corporations, superintendents, and managers, 68; clerks and other subordinate salaried employees, 186.

[3] Includes $7,689,514 which could not be distributed among the different classes.

[4] The amounts included in "Rent of offices and other sundry expenses" for the different classes and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, $242,364; clerks and other subordinate salaried employees, $163,859; and contract work, $107,259.

[5] Includes $114,758, representing the value of minor products.

[6] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

[7] Less than 1.

The operators are classified according to character of operations, being grouped into the following classes: (1) Those whose activities were confined to the operation of producing wells; (2) those drilling new wells in addition to operating producing wells; (3) those whose operations had not reached the productive stage at the close of the census year, that is, whose wells were still in the course of construction. Statistics based on the same classification are presented in much greater detail in the last four general tables (Tables 49 to 52).

The number of operators of producing enterprises who made complete returns was 7,793. The total quantity of petroleum reported by these operators in 1909 was 171,559,394 barrels, valued at $117,696,529. In addition to these statistics, some defective reports which showed only the quantity and value of products were received from a number of small operators. The compilations of the Bureau of the Census include only the totals for complete reports from actual producers; the United States Geological Survey included all reports, complete and incomplete, in its total and therefore reported, in its preliminary report on petroleum production,[1] 175,722,716 barrels, valued at $119,760,450. The complete returns from operators accordingly comprised 97.6 per cent of the total quantity and 98.3 per cent of the total value of the output of petroleum wells.

The final statistics published by the United States Geological Survey, "Mineral Resources of the United States," do not give the figures obtained in cooperation with the Bureau of the Census, but present returns based upon correspondence with transportation companies. The production as reported by transportation companies was 182,134,274 barrels, valued at $128,248,783. Thus it is seen that the two compilations of the United States Geological Survey, one of which was based on the schedules used by the Bureau of the Census and the other on information from an entirely different source, agree within 3.5 per cent, a close agreement in view of the fact that two independent lines of inquiry were pursued. The Survey's expert on petroleum production states, furthermore, that the statistics received from the transportation companies contain a certain amount of duplication between pipe line runs and railroad shipments.[1]

The quantity of natural gas shown in the preceding table is not entirely comparable with the totals obtained by the United States Geological Survey; the difference arises from the fact that the latter included returns from all distributing companies, whereas the canvass by the Bureau of the Census was confined to producing companies, including only such distributing companies as were at the same time engaged in the operation of natural gas wells. The total quantity of natural gas shown in the preceding table amounts to 559,800,490,000 cubic feet, but this quantity includes a duplication due to purchases of gas by some gas producers from others. The net quantity obtained by eliminating this duplication amounts to 431,852,530,000 cubic feet, valued at $57,716,520. The United States Geological Survey reported 480,706,174,000 cubic feet, valued at $63,206,941.

Table 1 shows that in addition to the 7,793 operators of producing enterprises in 1909, there were 260 operators who reported no products. Some of these operators reported their wells completed but not yet in operation; in other cases the wells drilled during the year were dry. No records were obtained for the wells still unfinished on December 31, 1909. Although these operators of nonproducing enterprises constituted only 3.2 per cent of the total number and drilled only 200 wells, or 1.3 per cent of the total number of wells drilled in 1909, their holdings of oil and gas land amounted to more than a million acres, or 7.3 per cent of the aggregate gross acreage, and their total expenses for the year were $7,044,383, or 4.9 per cent of the aggregate expenses for the entire industry.

Table 2 gives the percentage distribution of the important items contained in Table 1, by character of operations.

Table 2	PER CENT OF TOTAL FOR ALL ENTERPRISES.		
	Producing enterprises.		Nonproducing enterprises.
	Production only.	Production and drilling of new wells.	
Wells:			
Completed Dec. 31, 1909	33.8	66.1	0.1
Drilled in 1909	....	98.7	1.3
Land controlled, gross acreage	7.9	84.8	7.3
Wage earners	10.6	85.8	3.5
Primary horsepower	23.3	76.0	0.7
Products (quantity):			
Petroleum	14.2	85.8	....
Natural gas	11.7	88.3	....

While, as shown in Table 1, about three-fifths of the total number of operators were engaged solely in the operation of their wells and did not expand their business by drilling any new wells, these reported only a little more than one-third of the total number of wells and only 7.9 per cent of the aggregate acreage. The larger operators combined the drilling of new wells with the operation of those already producing, and although these constituted little more than one-third of the total number, they controlled almost two-thirds of the completed wells and more than five-sixths of the aggregate acreage. The large scale of the activities of this second class of operators, as compared with the other two classes, is even more apparent from the averages per operator presented in Table 1.

Comparative summary: 1909 and 1902.—Table 3 presents for 1909 and 1902 the statistics regarding petroleum and natural gas production for which comparable figures are available.

---

[1] Petroleum Operators' Statistics of Production in 1909, by David T. Day, page 2.

Table 3

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Number of completed wells, Dec. 31	166,320	134,363	23.8
Products:			
Total value	[1] $175,527,807	$102,034,590	72.0
Petroleum, barrels	171,559,394	89,275,302	92.2
Natural gas, M cubic feet	[1] 431,852,530	[2] 204,244,373	111.4
Royalties:			
Amount	$21,282,820	$11,463,786	85.7
Percentage of value of products	12.1	11.2	....

[1] Exclusive of duplications resulting from the purchase of natural gas by operators of gas wells.

[2] Exclusive of the estimated production of wells operated by municipalities and eleemosynary institutions.

The total number of operators reported for 1902 was 31,489, whereas in 1909 only 7,793 were reported. This great disparity is due in part to duplications arising from the bookkeeping methods employed by the pipe lines by which, in many cases, every part owner of a well with his individual share of the value of the product was shown as an operator. The Thirteenth Census on the other hand, treated as a single unit an enterprise operated by several joint owners.

The total number of proprietors and firm members of producing enterprises in 1909 was 16,213. The addition to this figure of the 1,966 corporations and the 169 concerns under other forms of organization in 1909 gives a total of 18,348, which is more nearly comparable with the 31,489 operators reported for 1902. After allowance is made for the difference in methods of reporting, however, it is still apparent that there was a decided decrease in the number of operators during the seven-year period. This fact, taken together with the large increase in the number of wells and in the total value of products since 1902, indicates that considerable concentration in the ownership and operation of petroleum and natural gas wells took place in the interval between the two enumerations. It is also noteworthy that the quantity of products increased at a greater rate between 1902 and 1909 than the value.

The ratio of royalties to value of products remained practically stationary. It must be borne in mind, however, that the royalties were not paid on the whole product, but only upon that part which was derived from leased land.

Summary for producing enterprises classified by principal product: 1909.—Table 4 presents a summary of the more important statistics for the producing enterprises in the petroleum and natural gas industry in 1909, classified according to the principal product. Table 5 gives the percentage distribution by branches of the industry of the important items contained in Table 4.

Table 4

	PRODUCING ENTERPRISES: 1909			
	Total.	Principal product.		
		Petroleum.	Natural gas.	Unclassified.
Number of operators	[1] 7,793	6,683	1,207	52
Persons engaged in industry	[2] 62,172	40,245	13,690	7,983
Proprietors and firm members	16,213	13,064	3,061	88
Number performing manual labor	2,155	2,068	82	5
Salaried officers of corporations, superintendents, and managers	[2] 3,140	1,926	961	185
Clerks and other subordinate salaried employees	[2] 2,988	1,222	1,277	303
Wage earners, Dec. 15, 1909, or nearest representative day	39,831	24,033	8,391	7,407
Wells:				
Completed Dec. 31, 1909	166,320	129,422	18,271	18,627
Oil	146,625	128,771	2,434	15,420
Gas	19,695	651	15,837	3,207
Drilled in 1909	15,412	11,451	2,654	1,307
Land controlled, net acreage	12,694,838	4,049,790	4,567,190	4,077,858
Primary horsepower	1,221,969	730,664	151,363	339,942
Capital	[3] $683,268,497	$360,422,056	$243,097,379	$58,226,625
Expenses of operation and development	$135,638,644	$79,748,844	$32,326,067	$23,563,733
Services	[4] $34,333,531	$22,597,940	$6,057,968	$5,271,400
Salaried officers, superintendents, and managers	[4] $4,848,224	$2,775,808	$1,319,470	$510,582
Clerks and other subordinate salaried employees	[4] $2,393,657	$984,392	$1,004,008	$241,398
Wage earners	$27,091,650	$18,837,740	$3,734,490	$4,519,420
Supplies, fuel, and rent of power	$51,280,485	$29,114,627	$14,261,414	$7,904,444
Supplies	$39,947,013	$28,452,233	$6,334,762	$5,160,018
Fuel and rent of power	$1,444,595	$658,448	$152,977	$633,170
Cost of purchased gas	$9,888,877	$3,946	$7,773,675	$2,111,256
Miscellaneous	[4] $50,024,628	$28,036,277	$12,006,685	$10,387,889
Royalties and rent of wells	$21,282,820	$12,509,181	$4,450,321	$4,323,318
Taxes	[4] $2,576,986	$1,004,164	$1,062,643	$477,827
Contract work	[5] $16,736,510	[5] $9,380,820	[5] $3,666,924	[5] $3,581,507
Rent of offices and other sundry expenses	[4] $9,428,312	$5,142,112	$2,826,797	$2,005,237
Products, total value [6]	[7] $185,416,684	$104,550,845	$53,574,936	$27,290,903
Petroleum:				
Barrels (42 gallons)	171,559,394	162,581,408	791,529	8,186,457
Value at well	$117,696,529	$103,600,756	$878,312	$13,217,461
Natural gas:				
M cubic feet	[7] 559,800,490	16,577,637	394,775,787	148,447,066
Value at well	[7] $67,605,397	$857,640	$52,674,560	$14,073,197
Average per operator:				
Wells completed Dec. 31, 1909	21	19	15	358
Land controlled, acres	1,629	606	3,784	78,420
Wage earners	5	4	7	142
Primary horsepower	157	109	125	6,537
Value of products	$23,793	$15,644	$44,387	$524,825

[1] Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

[2] The following numbers, which could not be distributed by classes, are properly credited in the total: Persons engaged in industry, 254; salaried officers of corporations, superintendents, and managers, 68; clerks and other subordinate salaried employees, 186.

[3] Includes $21,522,437, which could not be distributed among the different classes.

[4] The amounts included in "Rent of offices and other sundry expenses" for the different classes and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, $242,364; clerks and other subordinate salaried employees, $163,859; taxes, $32,352; and contract work, $107,259.

[5] The total includes $1,035,646 paid to part-time employees, distributed as follows: Petroleum, $856,935; natural gas, $86,513; unclassified, $92,198. See also note 4.

[4] Includes $114,758 value of minor products.

[7] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

At prior censuses petroleum enterprises and natural gas enterprises were classified separately, each group constituting a distinct industry. In compiling the Thirteenth Census statistics, however, it seemed best to treat these two kinds of enterprises as branches of a single industry.

A complete segregation of petroleum wells from natural gas wells is not possible in all cases, because many petroleum wells incidently yield some natural gas, and vice versa; both petroleum and natural gas, therefore, appear as products of each kind of wells.

In many instances, moreover, both sorts of wells were operated under a single management. In such cases the operators usually made only one report which covered the operations of both classes of wells. Generally in such combined reports, one or the other of the products was decidedly greater in value and most of the operators could be classified according to the principal product of their wells.

The reports of a few operators in Pennsylvania and West Virginia, however, combined enterprises of each class in which the value of the petroleum and of the natural gas produced was about equal. In these cases it was impossible to apply the classification by principal product, and the statistics relating to these enterprises are, therefore, shown in the tables separately, under the heading "Unclassified."

Table 5	PRODUCING ENTERPRISES—PERCENTAGE DISTRIBUTION, ACCORDING TO PRINCIPAL PRODUCT: 1909.		
	Petroleum.	Natural gas.	Unclassified.
Number of completed wells, Dec. 31, 1909	77.8	11.0	11.2
Oil	87.8	1.7	10.5
Gas	3.3	80.4	16.3
Land controlled, acres	31.9	36.0	32.1
Wage earners	60.3	21.1	18.6
Primary horsepower	59.8	12.4	27.8
Products:			
Quantity—			
Petroleum	94.8	0.4	4.8
Natural gas	3.0	70.5	26.5
Value	56.4	28.9	14.7

The 52 operators who could not be classified, although constituting less than 1 per cent of the total number, controlled 32.1 per cent of the total acreage and 11.2 per cent of the total number of completed wells, averaging 78,420 acres of land and 358 wells each. The average value of products per operator in this group exceeded half a million dollars, the total value of products comprising 14.7 per cent of the aggregate for the industry. It is apparent, therefore, that these 52 unclassified operators were doing business on a very large scale, whereas the operators included under the classified branches of the industry were more nearly representative of the prevailing type of operations.

Of the total quantity of petroleum produced by the enterprises in the industry in 1909, 94.8 per cent was returned by the enterprises in the petroleum branch, while 70.5 per cent of the quantity of natural gas produced was reported by the natural gas branch of the industry. Although the production of petroleum and natural gas included in the reports for the separate branches of the industry is somewhat less than the total production, it constitutes nevertheless a sufficiently large proportion of the total to be representative in character.

The total value of all the products of the industry in 1909 was $185,416,684. Of this total, $9,888,877 represented the cost of gas purchased by some operators from others within the industry; deducting this duplication, the net value of products was $175,527,807, of which the petroleum was valued at $117,696,529, the natural gas at $57,716,520, and the minor products at $114,758.

Five-sixths of the operators were in the petroleum branch of the industry and these controlled more than three-fourths of the completed wells. A large number of the petroleum enterprises were unimportant, however, as shown in Table 4, the average acreage, number of wage earners, and value of products per operator being much smaller for that branch than for the natural gas branch or for the unclassified enterprises.

GEOGRAPHICAL DISTRIBUTION.

The Bureau of the Census, for purposes of comparability, followed the classification of oil fields used by the United States Geological Survey in its report for the year next preceding the census. The following is the classification adopted:[1]

I. The Appalachian field, comprising the states of New York, Pennsylvania, West Virginia, Kentucky, and Tennessee, and the following counties in eastern Ohio: Ashtabula, Athens, Belmont, Carroll, Columbiana, Coshocton, Fairfield, Guernsey, Harrison, Hocking, Holmes, Jackson, Jefferson, Knox, Licking, Lorain, Monroe, Morgan, Mahoning, Muskingum, Noble, Perry, Richland, Stark, Summit, Trumbull, Tuscarawas, Vinton, and Washington.

II. The Lima-Indiana field, comprising the state of Indiana and the following counties of Ohio: Allen, Auglaize, Darke, Hancock, Hardin, Henry, Logan, Lucas, Mercer, Ottawa, Paulding, Sandusky, Seneca, Shelby, Van Wert, Wood, and Wyandot.

III.—The Illinois field, comprising the state of Illinois.

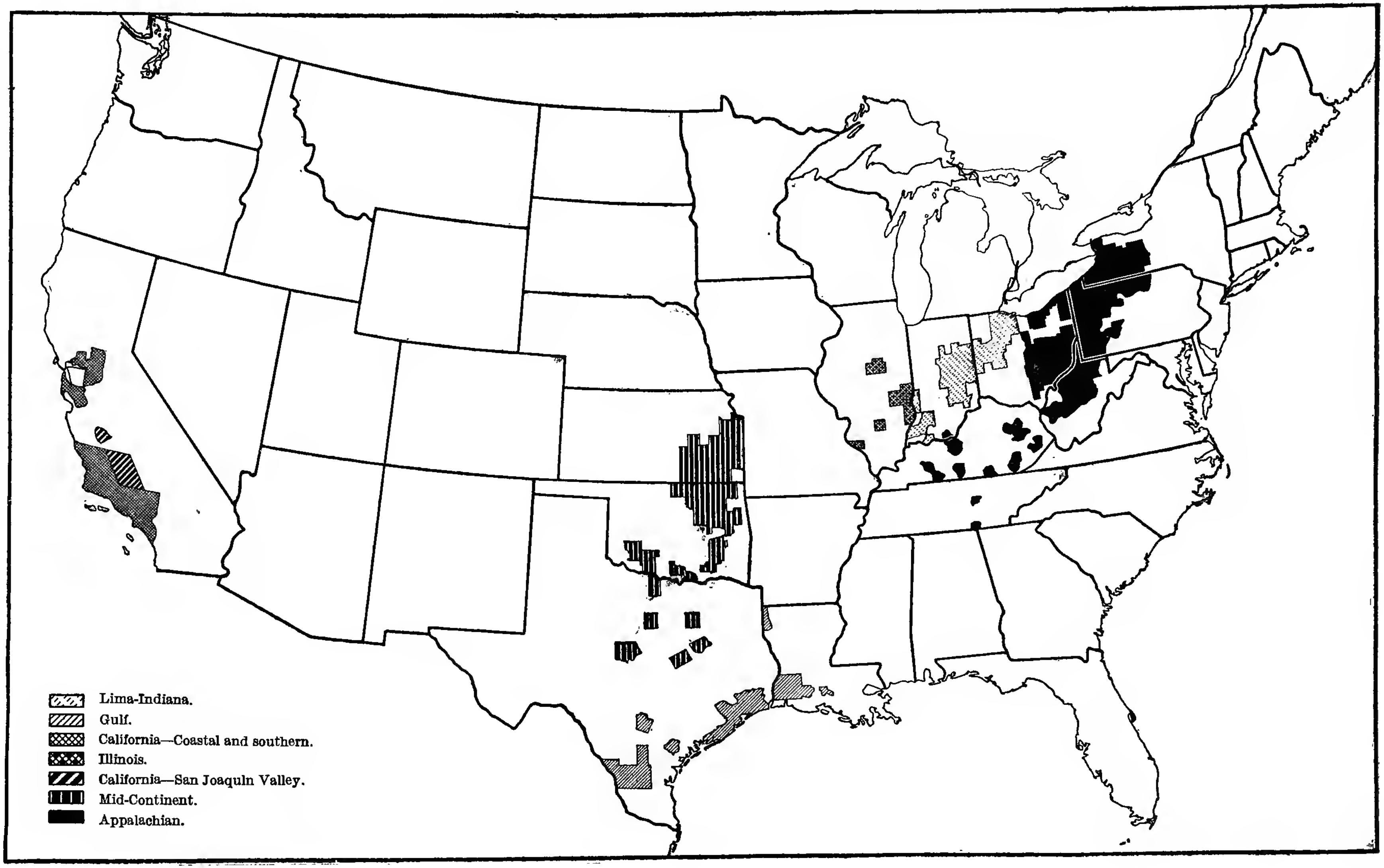
IV.—The Mid-Continent field, comprising the states of Kansas and Oklahoma, and the following counties in Texas: Anderson, Brown, Clay, Coleman, Dallas, McLennan, Navarro, and Sabine.

V.—The Gulf field, comprising the state of Louisiana and the following counties in Texas: Bexar, Brazoria, De Witt, Duval, Gonzales, Hardin, Harris, Jefferson, Liberty, McMullen, Matagorda, Starr, and Walker

---

[1] The Survey makes no classification of gas fields, giving figures for this product by states only; but the Bureau of the Census uses, for regions producing gas only, the same classification adopted for oil fields, in so far as these two classifications correspond. In some cases counties reported gas production without any oil production, and such counties were here added to the Survey's classification of fields.

PETROLEUM AND NATURAL GAS FIELDS: 1909.


▨ Lima-Indiana.
▨ Gulf.
▩ California—Coastal and southern.
▩ Illinois.
▨ California—San Joaquin Valley.
▥ Mid-Continent.
■ Appalachian.

VI.—The Coastal and southern California field, comprising the following counties in California: Alameda, Humboldt, Los Angeles, Monterey, Orange, Ventura, Santa Barbara, San Luis Obispo, San Mateo, and Santa Clara.

VII.—The San Joaquin Valley field, comprising Fresno, Kern, Kings, Mono, Sacramento, San Bernardino, San Joaquin, Solano, and Tulare counties, California.

VIII.—All other fields.

The boundaries of these fields are indicated on the map on the preceding page.

Summary, by fields: 1909.—Table 6 summarizes the persons engaged in industry, capital, expenses of operation and development, value of products, etc., for the producing oil and gas enterprises for 1909 by fields. More detailed figures are presented in the general tables at the end of this report.

Table 6

FIELD.	PRODUCING ENTERPRISES: 1909									
	Number of operators.	Number of completed wells Dec. 31, 1909.	Persons engaged in industry.				Total primary horsepower.	Capital.	Expenses of operation and development.	Total value of products.
			Proprietors and firm members.		Salaried employees.	Wage earners, Dec. 15, 1909, or nearest representative day.				
			Total.	Number performing manual labor.						
United States	[1] 7,783	166,320	16,213	2,155	[2] 6,128	39,831	1,221,969	[3] $683,268,487	$135,638,644	[4] $185,416,684
Appalachian	4,829	109,685	10,752	1,816	2,722	20,337	918,727	344,007,846	68,498,187	97,764,641
Lima-Indiana	1,275	23,132	3,532	216	474	1,975	57,691	27,934,429	4,359,494	6,027,776
Illinois	323	10,918	817	22	312	4,059	40,615	34,366,518	13,476,053	18,895,815
Mid-Continent	984	16,689	769	44	1,156	4,730	101,352	102,990,290	18,350,832	26,058,280
Gulf	128	1,351	198	39	217	1,566	23,992	16,692,316	5,039,888	6,877,891
California:										
Coastal and southern	144	1,568	83	13	265	1,738	18,425	32,684,916	5,800,602	7,009,700
San Joaquin Valley	198	2,748	30	....	696	5,269	58,164	113,799,314	19,409,485	22,300,635
Other fields [5]	51	229	32	5	32	157	3,003	3,103,354	704,103	481,946

[1] Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields.
[2] Includes 254 salaried employees who could not be distributed by fields.
[3] Includes $7,689,514 which could not be distributed by fields.
[4] Includes a duplication of $9,888,877 resulting from the purchase of natural gas by operators of gas wells.
[5] Includes one operator in Tennessee, in order to avoid disclosing individual operations.

The Appalachian field ranked far in advance of any other field, reporting 109,685 wells, or 65.9 per cent of the total number; 20,337 wage earners, or 51.1 per cent of the total number; and products valued at $97,764,641, or 52.7 per cent of the gross value of products. The Lima-Indiana field ranked second in number of wells, with the Mid-Continent field third, while in number of wage earners the San Joaquin Valley field was second in rank, the Mid-Continent field being third. The Illinois field ranked fourth in both respects. The number of wells in the United States as a whole, was much greater than the number of wage earners, many of the proprietors themselves performing manual labor, and a single person often being able to attend to several contiguous wells. The two California fields and the Gulf field were the only ones in which the number of wage earners exceeded the number of wells.

Well record, by fields and states: 1909.—Table 7 gives a classification of all wells controlled by producing enterprises according to character of product, by fields and by states, for 1909.

The total number of productive petroleum and gas wells drilled in 1909 for which complete reports were obtained directly from the operators was 13,076. In addition, defective reports were received for 99 such wells. The returns received from other sources by the United States Geological Survey showed for the same year 14,923 producing wells drilled. The census returns thus show 1,847, or 12.4 per cent, fewer wells than the Geological Survey. Bearing in mind that the returns as to the quantity of oil received from the same operators were 3.5 per cent short of the quantity reported to the United States Geological Survey by the transportation companies, and that the latter amount admittedly includes some duplications, it is probable that the number of wells reported by the same agencies may likewise be overstated. The greater difference between the two reports in the matter of number of wells is doubtless due in part to duplications arising from the joint ownership of the same wells by several proprietors, each of whom had an individual account with the pipe line or railroad company. In preparing the original census reports for tabulation, a number of cases were discovered in which reports had been made by each of several joint owners of the same undivided enterprises; such partial returns were consolidated into one report covering the operations of the entire enterprise, thus eliminating a number of duplications. Since the Survey obtained its information through a secondary source, however, such duplications could not be easily detected.

The total number of active wells on December 31, 1909, for which complete reports were received from operators was 166,320, of which 146,625 were classified as petroleum wells and 19,695 as gas wells. Pennsylvania had the largest number of completed wells, reporting more than one-third of the total. Ohio ranked second in this respect.

Of the total number of active wells, 13,076 were drilled during 1909. In addition, 2,336 dry wells were drilled during the year—that is, 15.2 per cent of the total wells drilled during the year were reported as dry. More petroleum wells were drilled in Oklahoma than in any other state, though Illinois ranked close behind, with Pennsylvania third. These three states reported more than half the total number of petroleum wells drilled. Pennsylvania led in the number of gas wells drilled, the other states of importance being West Virginia, Ohio, and Kansas.

Table 7

FIELD AND STATE.	PRODUCING ENTERPRISES: 1909										
	Number of wells drilled in 1909.					Number of wells abandoned in 1909.			Number of completed wells, Dec. 31, 1909.		
	Total.	Producing oil alone.	Producing gas alone.	Producing both oil and gas.	Dry.	Total.	Oil.	Gas.	Total.	Oil.	Gas.
United States	**15,412**	**7,401**	**2,441**	**3,234**	**2,338**	**5,871**	**4,837**	**1,034**	**188,320**	**148,625**	**19,695**
FIELDS.											
Appalachian	7,740	2,945	1,725	1,942	1,128	2,573	2,089	484	109,686	94,799	14,887
Lima-Indiana	744	233	167	203	141	2,258	1,999	259	23,132	20,743	2,389
Illinois	2,537	1,580	58	515	384	205	170	35	10,918	10,689	229
Mid-Continent	3,047	1,883	450	284	430	581	328	253	16,689	14,701	1,988
Gulf	544	308	17	49	170	173	173		1,351	1,290	61
California–Coastal and southern	111	54		49	8	41	39	2	1,568	1,555	13
California—San Joaquin Valley	597	382		189	26	30	30		2,748	2,728	20
Other fields	92	16	24	3	49	10	9	1	228	120	108
STATES.											
Arkansas	14		13		1	1		1	62		62
California	708	436		238	34	71	69	2	4,316	4,283	33
Colorado	39	8		3	28	9	9		76	75	1
Illinois	2,537	1,580	58	515	384	205	170	35	10,918	10,689	229
Indiana	382	101	158	33	90	1,762	1,526	236	10,373	8,130	2,243
Kansas	597	33	369	5	190	349	124	225	3,402	1,754	1,648
Kentucky	143	30	19	38	56	32	32		1,109	950	159
Louisiana	112	53	17	12	30	38	38		246	187	59
Michigan									21	21	
Missouri	24	2	6		16				39	9	30
New York	450	140	51	240	19	73	64	9	11,342	10,696	646
North Dakota	5		2		3				6		6
Ohio	2,391	868	413	571	539	1,436	1,276	160	35,067	32,408	2,659
Oklahoma	2,203	1,680	75	262	186	155	132	23	12,113	11,798	315
Pennsylvania	3,344	1,298	668	1,029	349	863	592	271	59,780	51,035	8,745
South Dakota									3		3
Tennessee									1		1
Texas	679	425	6	54	194	212	207	5	2,279	2,252	27
West Virginia	1,774	741	583	234	216	665	598	67	15,146	12,323	2,823
Wyoming	10	6	3		1				21	15	6

The number of wells abandoned during the same year was 5,871, three-tenths of which were in Indiana. This state and the field of which it comprised a part, constituted the only section in which the number of wells abandoned in 1909 exceeded the number of new producing wells drilled.

PERSONS ENGAGED IN THE INDUSTRY.

Occupational status.—Table 8 presents a complete summary for the persons engaged in each branch of the petroleum and natural gas industry in 1909, classified according to the character of the operations in which the operator reporting was engaged. The number of those employees working in central administrative offices of operators who conducted enterprises in more than one state or field is distributed by character of employment in the aggregate, but not for the various subordinate groups. For this reason the percentage distribution according to occupational status is shown only for the aggregate number.

Table 8

	PERSONS ENGAGED IN PRODUCING AND NONPRODUCING ENTERPRISES: 1909										
	Aggregate.[1]		Producing enterprises.								Nonproducing enterprises.
			Production only.				Production and drilling of new wells.				
	Number.	Per cent distribution.	Total.	Petroleum.	Natural gas.	Unclassified.	Total.	Petroleum.	Natural gas.	Unclassified.	
Total	**64,089**	**100.0**	**18,528**	**13,128**	**3,310**	**92**	**45,390**	**27,119**	**10,380**	**7,891**	**1,917**
Proprietors and officials	19,749	30.8	11,541	9,384	2,115	42	7,744	5,606	1,907	231	396
Proprietors and firm members	16,420	25.6	10,743	8,846	1,862	35	5,470	4,218	1,199	53	207
Number performing manual labor	2,174	3.4	1,562	1,507	52	3	593	561	30	2	19
Salaried officers of corporations	1,220	1.9	318	186	131	1	807	455	287	65	67
Superintendents and managers	2,109	3.3	480	352	122	6	1,467	933	421	113	122
Clerks and other subordinate salaried employees	3,058	4.8	592	275	313	4	2,210	947	964	299	70
Wage earners	41,282	64.4	4,395	3,467	882	46	35,436	20,566	7,509	7,361	1,451
Engineers, firemen, mechanics, etc	28,085	43.8	3,261	3,098	120	43	23,802	16,055	2,082	5,665	1,022
All other wage earners[2]	13,197	20.6	1,134	369	762	3	11,634	4,511	5,427	1,696	429

---

[1] Includes 254 persons—28 salaried officials, 40 superintendents and managers, and 186 clerks and other subordinate salaried employees—that could not be distributed among the various classes.

[2] "All other wage earners" includes, in the various classes, 15 boys under 16 years of age.

Of the 64,089 persons reported as engaged in the industry, 25.6 per cent were proprietors and firm members, 10 per cent salaried employees, and 64.4 per cent wage earners. Approximately one-fourth of the total number of persons engaged in the industry were employed in the branch confined to production only, while about seven-tenths of them were reported from enterprises engaged in both production and the drilling of new wells.

Among the 16,420 proprietors and firm members, 2,174, or 13.2 per cent, reported that they were engaged in manual labor; and of these, 95.1 per cent were in the petroleum branch of the industry. A larger proportion of the proprietors and firm members of enterprises confined to production only engaged in manual labor than of the proprietors of enterprises which also drilled new wells.

Of the persons engaged in "production only," about one-fourth were wage earners; whereas wage earners constituted more than three-fourths of the persons engaged in the "production and drilling of new wells." In enterprises whose principal product was petroleum, engineers, firemen, mechanics, etc., made up the great majority of the wage earners, but in the production of natural gas this group was decidedly outnumbered by "all other wage earners."

Salaried employees.—Table 9 shows the number of salaried employees, classified according to grade for all enterprises, both producing and nonproducing, in 1909, and their total salaries. The number of salaried employees, 6,387, constituted only 10 per cent of the total number of persons engaged in the industry.

Table 9

CLASS.	SALARIED EMPLOYEES, ALL ENTERPRISES: 1909	
	Number.	Salaries.
Total	6,387	$7,458,579
Officers of corporations	1,220	1,985,443
Superintendents and managers	2,109	3,053,936
Clerks and other subordinate salaried employees	3,058	2,419,200

Wage earners.—The number of wage earners directly employed by operators of producing and nonproducing enterprises falls considerably short of the total number of persons performing manual labor in connection with the oil and gas industry. The reason for this is in the first place that the drilling of new wells is done very largely by contractors whose employees can not be reported accurately by the operators. The total amount paid for contract work in 1909 was $16,001,306, as compared with $28,094,033 paid to wage earners employed directly by the operators. Furthermore, the operation of an oil or gas well does not in all cases require the constant attendance of a regular employee. The small operator finds it possible to dispense with the services of regular wage earners by hiring an independent mechanic for a few hours during the week, and to meet this demand many mechanics in oil fields specialize in working by the job for a number of operators. The total amount paid by operators of oil and gas wells to part-time employees in 1909 was $1,038,366. Many operators, moreover, run their wells without hired labor of any kind, performing the manual labor themselves.

Kind of labor used.—Table 10 shows the number of operators of producing wells for 1909, classified according to the kind of labor used. Statistics for the operators who reported either petroleum wells only or natural gas wells only are given in greater detail in tables in Part IV.

Table 10

STATE AND CHARACTER OF OPERATIONS.	PRODUCING ENTERPRISES: 1909				
	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
United States	[1] 7,793	3,632	2,457	448	1,405
Production only	5,208	1,726	1,942	157	1,381
Production and drilling of new wells	2,738	1,908	515	291	24
Arkansas	3	1	2	......	......
Production only	1	1	......	......	......
Production and drilling of new wells	2	......	2	......	......
California	342	287	13	31	11
Production only	127	76	13	27	11
Production and drilling of new wells	215	211	......	4	......
Colorado	23	9	8	3	3
Production only	17	4	7	3	3
Production and drilling of new wells	6	5	1	......	......
Illinois	323	281	31	6	5
Production only	130	104	20	1	5
Production and drilling of new wells	193	177	11	5	......
Indiana	644	185	77	46	336
Production only	569	141	65	28	335
Production and drilling of new wells	75	44	12	18	1
Kansas	217	120	63	15	19
Production only	143	75	48	2	18
Production and drilling of new wells	74	45	15	13	1
Kentucky	85	39	36	6	4
Production only	55	19	27	5	4
Production and drilling of new wells	30	20	9	1	......
Louisiana	31	22	2	4	3
Production only	10	6	1	1	2
Production and drilling of new wells	21	16	1	3	1
Michigan	1	1	......	......	......
Production only	1	1	......	......	......
Missouri	12	......	6	3	3
Production only	7	......	5	......	2
Production and drilling of new wells	5	......	1	3	1
New York	708	154	426	34	94
Production only	559	92	368	5	94
Production and drilling of new wells	149	62	58	29	......
North Dakota	1	1	......	......	......
Production and drilling of new wells	1	1	......	......	......
Ohio	1,195	547	497	46	105
Production only	786	260	404	18	104
Production and drilling of new wells	409	287	93	28	1
Oklahoma	711	584	91	17	19
Production only	323	246	56	3	18
Production and drilling of new wells	388	338	35	14	1
Pennsylvania	3,030	994	1,065	205	766
Production only	2,147	531	824	43	749
Production and drilling of new wells	883	463	241	162	17
South Dakota	3	......	......	......	3
Production only	3	......	......	......	3
Tennessee	1	......	1	......	......
Production only	1	......	1	......	......
Texas	163	127	8	21	7
Production only	70	40	4	20	6
Production and drilling of new wells	93	87	4	1	1
West Virginia	442	274	130	11	27
Production only	256	129	99	1	27
Production and drilling of new wells	186	145	31	10	......
Wyoming	7	6	1	......	......
Production only	1	1	......	......	......
Production and drilling of new wells	6	5	1	......	......

---

[1] Exclusive of duplications in the case of certain operators who reported enterprises in two or more states. These duplications have not been eliminated from the figures for the different classes.

Less than one-half of the total number of operators employed regular wage earners, though more than two-thirds of the operators who were engaged in drilling new wells in conjunction with the operation of old wells employed regular wage earners. In all but three of the important states shown, this constituted the largest single class of operators. Slightly over one-sixth of the operators employed no hired labor whatever, almost four-fifths of these being reported from Pennsylvania and Indiana. More than half the operators in the latter state employed no hired labor. This class was practically confined to producing properties where no new wells were drilled during the census year. The operators employing part-time labor were engaged chiefly in production on a small scale, as has already been stated. Four-fifths of these were reported from Pennsylvania, Ohio, and New York. In the latter state this class constituted more than half the total number of operators; and in Pennsylvania it was also the largest class, comprising more than one-third of the total number of operators.

Wage earners employed, by months.[1]—Table 11 gives the number of wage earners employed on the 15th day of each month during the year 1909, in the United States, separately for producing and nonproducing enterprises, and by fields and states for all producing enterprises. The wage earners connected with nonproducing enterprises were mostly employed in California.

---

[1] The table gives a total of 40,710 wage earners employed December 15, 1909, while Table 1 gives a total of 41,282 wage earners employed on that date or the nearest representative day. The difference of 572, or less than 1.5 per cent, is due to the fact that these figures were obtained from two separate inquiries on the census schedule. The first of these inquiries asked for the specific classes of wage earners employed on December 15, or the nearest representative day. If the well was not operated on December 15, or was running under abnormal conditions, then in answer to this inquiry the operator reported the number of men employed on the nearest day when conditions were normal. The second inquiry asked for the number of wage earners on the 15th day of each month, which might or might not be a normal day. In all other tables in this section giving statistics of wage earners the number obtained from the inquiry referring to December 15, or the nearest representative day, has been used, since it is considered that this number more closely approximates the true total of wage earners depending upon the industry for a livelihood.

Table 11

FIELD AND STATE.	NUMBER OF WAGE EARNERS EMPLOYED ON THE 15TH DAY OF—											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
UNITED STATES	**34,714**	**34,124**	**34,602**	**35,614**	**36,620**	**37,566**	**38,262**	**38,754**	**39,023**	**40,156**	**41,099**	**40,710**
Producing enterprises	**34,162**	**33,521**	**33,920**	**34,868**	**35,854**	**36,728**	**37,368**	**37,849**	**38,098**	**39,121**	**39,932**	**39,502**
Nonproducing enterprises	**552**	**603**	**682**	**746**	**766**	**838**	**894**	**905**	**925**	**1,035**	**1,167**	**1,208**
Producing enterprises by fields and states:												
FIELDS.												
Appalachian	16,961	16,386	16,687	17,263	18,027	18,859	19,192	19,981	20,032	20,443	21,446	20,276
Lima-Indiana	2,040	2,064	2,022	2,020	2,025	1,978	1,916	1,955	1,981	1,962	1,868	1,942
Illinois	3,680	3,634	3,625	3,702	3,749	3,847	3,879	3,821	3,692	3,834	3,853	3,957
Mid-Continent	4,089	4,004	4,022	4,049	4,099	4,426	4,458	4,210	4,301	4,493	4,404	4,705
Gulf	1,610	1,644	1,528	1,572	1,616	1,480	1,512	1,487	1,465	1,515	1,427	1,513
California—Coastal and southern	1,493	1,461	1,493	1,562	1,610	1,628	1,616	1,591	1,613	1,672	1,671	1,732
California—San Joaquin Valley	4,164	4,198	4,417	4,560	4,589	4,364	4,645	4,666	4,858	5,042	5,125	5,239
Other fields	125	130	126	140	139	146	150	138	156	160	138	138
STATES.												
California	5,657	5,659	5,910	6,122	6,199	5,992	6,261	6,257	6,471	6,714	6,796	6,971
Colorado	110	112	109	116	117	117	121	120	127	124	122	122
Illinois	3,680	3,634	3,625	3,702	3,749	3,847	3,879	3,821	3,692	3,834	3,853	3,957
Indiana	1,419	1,452	1,396	1,394	1,403	1,357	1,303	1,327	1,357	1,334	1,245	1,325
Kansas	932	843	839	904	954	1,159	1,158	967	966	1,130	1,162	1,283
Kentucky	225	218	204	203	196	212	219	270	254	266	253	206
Louisiana	657	653	537	606	616	557	542	531	509	532	465	488
New York	346	334	341	338	384	382	383	370	369	382	374	370
Ohio	4,827	4,589	4,731	4,927	5,110	5,207	5,378	5,663	5,730	5,859	6,303	5,865
Oklahoma	2,737	2,760	2,806	2,772	2,774	2,864	2,880	2,851	2,947	3,007	2,929	3,059
Pennsylvania	5,993	5,705	5,761	6,004	6,369	6,853	6,964	7,234	7,197	7,510	7,738	7,365
Texas	1,373	1,392	1,368	1,339	1,371	1,326	1,390	1,348	1,344	1,339	1,275	1,388
West Virginia	6,191	6,152	6,276	6,417	6,590	6,826	6,861	7,072	7,106	7,054	7,401	7,087
All other states[1]	15	18	17	24	22	29	29	18	29	36	16	16

[1] Includes operators distributed as follows: Arkansas, 3; Michigan, 1; North Dakota, 1; and Wyoming, 7.

In 1909 the maximum number of wage earners was reported for November, and the minimum for February. Most of the fields and states showed the same gradual advance throughout the year until the maximum was reached in November or December. In the Lima-Indiana, and in the Gulf fields, the maximum number was reported for February and the minimum for November. The states in which a decline was reported were Indiana, Louisiana, Texas, Kentucky, and New York.

CHARACTER OF ORGANIZATION.

Classification of operators by character of organization.—Table 12 presents the principal data for 1909 for operators of producing petroleum and natural gas wells classified according to form of organization, by states.

Table 12

STATE AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909							
	Number of operators.	Number of wage earners.		Value of products.		Per cent distribution.		
		Total.	Average per operator.	Total.	Average per operator.	Number of operators.	Number of wage earners.	Value of products
United States	[1] 7,793	38,831	5	[2] $185,416,684	$23,793	100.0	100.0	100.0
Individual	2,298	2,020	1	9,662,086	4,205	29.5	5.1	5.2
Firm	3,360	3,085	1	18,954,985	5,641	43.1	7.7	10.2
Corporation	1,966	32,636	17	149,358,498	75,971	25.2	81.9	80.6
Other	169	2,090	12	7,441,115	44,030	2.2	5.2	4.0
California	338	7,007	21	29,310,335	86,461	100.0	100.0	100.0
Individual	49	166	3	943,566	19,256	14.5	2.4	3.2
Firm [3]	27	90	3	358,308	13,271	8.0	1.3	1.2
Corporation	263	6,751	26	28,008,461	106,496	77.6	96.3	95.6
Colorado	23	126	6	317,680	13,812	100.0	100.0	100.0
Unincorporated	12	5	(4)	20,456	1,705	52.2	4.0	6.4
Corporation	11	121	11	297,224	27,020	47.8	96.0	93.6
Illinois	323	4,069	13	18,895,815	58,501	100.0	100.0	100.0
Individual	38	98	3	360,692	9,492	11.8	2.4	1.9
Firm	189	360	2	3,326,717	17,602	58.5	8.9	17.6
Corporation	88	3,477	40	13,709,342	155,788	27.2	85.7	72.6
Other	8	124	16	1,499,064	187,383	2.5	3.1	7.9
Indiana	644	1,345	2	3,224,619	5,007	100.0	100.0	100.0
Individual	246	87	(4)	263,875	1,073	38.2	6.5	8.2
Firm	126	117	1	423,291	3,359	19.6	8.7	13.1
Corporation	212	1,132	5	2,496,298	11,775	32.9	84.2	77.4
Other	60	9	(4)	41,155	686	9.3	0.7	1.3
Kansas	217	1,302	6	6,681,780	30,792	100.0	100.0	100.0
Individual	34	19	1	115,745	3,404	15.7	1.5	1.7
Firm	41	25	1	213,766	5,214	18.9	1.9	3.2
Corporation	139	1,256	9	6,340,496	45,615	64.1	96.5	94.9
Other	3	2	1	11,773	3,924	1.4	0.2	0.2
Kentucky	85	206	2	892,281	10,497	100.0	100.0	100.0
Individual	8	1	(4)	8,833	1,104	9.4	0.5	1.0
Firm [5]	37	35	1	118,221	3,195	43.5	17.0	13.2
Corporation	40	170	4	765,227	19,131	47.1	82.5	85.8
Louisiana	31	523	17	2,177,986	70,258	100.0	100.0	100.0
Individual	3			24,094	8,031	9.7		1.1
Firm [3]	3	6	2	31,357	10,452	9.7	1.1	1.4
Corporation	25	517	21	2,122,535	84,901	80.6	98.9	97.5
New York	708	374	1	2,668,936	3,770	100.0	100.0	100.0
Individual	227	74	(4)	534,507	2,355	32.1	19.8	20.0
Firm	423	140	(4)	1,190,238	2,814	59.7	37.4	44.6
Corporation	49	151	3	921,470	18,806	6.9	40.4	34.5
Other	9	9	1	22,781	2,531	1.3	2.4	0.9
Ohio	1,188	5,897	5	29,620,859	24,933	100.0	100.0	100.0
Individual	303	309	1	1,275,171	4,208	25.5	5.2	4.3
Firm	578	587	1	3,236,242	5,599	48.7	10.0	10.9
Corporation	287	4,919	17	24,638,448	85,848	24.2	83.4	83.2
Other	20	82	4	471,098	23,554	1.7	1.4	1.6
Oklahoma	711	3,066	4	17,685,092	24,874	100.0	100.0	100.0
Individual	85	220	3	1,165,510	13,712	12.0	7.2	6.6
Firm	131	256	2	1,614,074	12,321	18.4	8.3	9.1
Corporation	476	2,470	5	14,262,604	29,963	66.9	80.6	80.6
Other	19	120	6	642,904	33,837	2.7	3.9	3.6
Pennsylvania	3,030	7,397	2	38,187,475	12,836	100.0	100.0	100.0
Individual	1,204	740	1	3,621,597	3,008	39.7	10.0	9.2
Firm	1,579	1,047	1	5,933,702	3,758	52.1	14.2	15.1
Corporation	207	4,591	22	26,581,488	128,413	6.8	62.1	67.8
Other	40	1,019	25	3,060,688	76,517	1.3	13.8	7.8
Texas	163	1,405	8	6,391,313	38,210	100.0	100.0	100.0
Individual	42	174	4	635,898	15,140	25.8	12.4	9.9
Firm	59	160	3	793,710	13,453	36.2	11.4	12.4
Corporation	59	1,040	18	4,869,110	82,527	36.2	74.0	76.2
Other	3	31	10	92,595	30,865	1.8	2.2	1.4
West Virginia	442	7,093	16	28,188,087	63,774	100.0	100.0	100.0
Individual	72	128	2	687,752	9,552	16.3	1.8	2.4
Firm	184	285	2	1,782,517	9,688	41.6	4.0	6.3
Corporation	175	6,010	34	24,190,745	138,233	39.6	84.7	85.8
Other	11	670	61	1,527,073	138,825	2.5	9.4	6.4
All other states [6]	28	31	1	164,266	5,867	100.0	100.0	100.0
Individual	8			5,712	714	28.6		3.5
Firm	3			3,504	1,168	10.7		2.1
Corporation	17	31	2	155,050	9,121	60.7	100.0	94.4

---

[1] Exclusive of duplications in the case of certain operators who reported enterprises in two or more states.
[2] Includes a duplication of $9,888,877 resulting from the purchase of natural gas by operators of gas wells.
[3] Includes one other form of organization.
[4] Less than one.
[5] Includes two other forms of organization.
[6] Includes operators distributed as follows: Arkansas, 3; Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Wyoming, 7.

Corporations constituted by far the most important group of operators of petroleum and natural gas wells. Although constituting only one-fourth of the total number of operators, the corporations contributed four-fifths of the total value of products and employed more than four-fifths of the total number of regular wage earners. In some of the principal oil and gas producing states the predominance of the corporate form of organization was still greater. In California, Colorado, Kansas, and Louisiana incorporated companies reported more than 90 per cent of the total value of products.

Incorporated companies as a whole represent large-scale operations, while individuals and firms represent operations on a smaller scale. The average value of products per operator in the United States amounted to $75,971 for corporations, $5,641 for firms, and $4,205 for individuals. These averages varied somewhat in the different states, but in no state did the average per individual or firm reach $20,000. The average number of wage earners per individual or firm for the United States was less than 1, while the average number of wage earners for incorporated companies was 17.

The group of 169 operators other than individuals, firms, and corporations, includes 62 concerns made up of some combination of individuals, firms, and corporations, operating jointly each with an undivided property interest in the wells, 53 cooperative associations, 51 estates, 2 churches, and 1 fraternal society. The total number of proprietors, whether individuals, partnerships, or corporations, in the 62 concerns above mentioned was 206, and the total value of their products was $6,890,617. Of the 53 cooperative associations, 52 were engaged in the operation of natural gas wells, 51 of these being in Indiana and 1 in Kentucky, and 1 association was engaged in petroleum production in Pennsylvania. Table 36, in Part III, gives a summary of the operations of the Indiana cooperative associations.

Table 13 presents the statistics of the nonproducing enterprises, by character of organization, for the United States and for the state of California.

Table 13 — NONPRODUCING ENTERPRISES: 1909

STATE AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.		Per cent distribution.	
		Total.	Average per operator.	Number of operators.	Number of wage earners.
UNITED STATES					
All classes	260	1,451	6	100.0	100.0
Individual	15	74	5	5.8	5.1
Firm	36	166	5	13.8	11.4
Corporation	209	1,211	6	80.4	83.5
California					
All classes	168	1,152	7	100.0	100.0
Individual	4	16	4	2.4	1.4
Firm	10	131	13	6.0	11.4
Corporation	154	1,005	7	91.7	87.2
All other states					
All classes	92	299	3	100.0	100.0
Individual	11	58	5	12.0	19.4
Firm	26	35	1	28.3	11.7
Corporation	55	206	4	59.8	68.9

As appears from the preceding table, the corporate form of organization predominated in nonproducing enterprises. In the scale of operations, however, there was little difference between individuals, firms, and corporations. On the whole, the nonproducing enterprises were conducted in 1909 on a very small scale.

LAND TENURE.

Complete returns regarding the tenure of oil and gas lands were received from 7,289 operators of producing properties and from 245 operators of the properties which were not productive during the census year, no answers to this inquiry being received from 504 operators of properties on which producing wells were located nor from 15 operators of nonproducing properties. Statistics regarding acreage were therefore received from more than nine-tenths of the total number of operators.

Acreage and form of tenure.—Table 14 summarizes for 1909, the statistics for the acreage of land controlled by the 7,534 operators who made reports on this item, classified by character of enterprises, according to the form of tenure.

The total net holdings of operators of both producing and nonproducing properties amounted to 13,809,939 acres, of which 94.5 per cent was held by the operators under some form of lease. Two-thirds of the net acreage was located in the Appalachian field.

The Gulf field is the only one shown separately in which the net acreage of nonproducing properties exceeded that of the producing properties, the nonproducing land in this field constituting 64.1 per cent of the total of such land for the United States. Almost all of the nonproducing land in the Gulf field was held under lease. Only 5.4 per cent of the producing acreage and 6.8 per cent of the nonproducing acreage was owned by the operators.

The acreage reported in the following table as sublet consisted very largely of land the oil rights of which were held by operators who had sublet the gas rights to other operators, or vice versa. In such cases the sublessees reported as held under lease this acreage to which they held only partial rights. In other words, the same land was reported twice, once by the operator controlling the gas rights, and once by the operator controlling oil rights. Moreover, some producers sublet to other operators portions of properties which they held under direct lease from the owners but made no subtraction of such sublet land in the report of their holdings, while the sublessees also reported the same land as held under lease by themselves. These cases obviously involved duplication, but no duplication is involved in cases where sublessees failed to report acreage, or where their holdings were not yet productive. The gross acreage reported as leased amounted to 14,425,315. In order to present a total approximately free from duplications the acreage reported as sublet was deducted from the gross total leased. The table shows the acreage actually reported, the total leased being the sum of the net leased acreage and of the sublet acreage, the gross total acreage being the sum of the land owned and the gross acreage leased.

In Tables 15, 17, and 18 of this section on land tenure the gross acreage reported is the figure used, for in the tables which classify the acreage by character of organization and by size of holdings, the holdings of oil rights and of gas rights upon the same tract of land are both properly included.

Table 14

FIELD AND CHARACTER OF ENTERPRISE.	ACREAGE CONTROLLED: 1909					
	Net acreage.			Sublet.	Gross acreage reported.	
	Total.	Owned.	Held under lease.		Total.	Held under lease.
United States	13,809,939	762,276	13,047,683	1,377,652	15,187,591	14,425,315
Producing	12,694,838	686,268	12,008,570	1,377,226	14,072,064	13,385,798
Nonproducing	1,115,101	76,008	1,039,093	428	1,115,527	1,039,519
Appalachian	9,230,791	400,783	8,830,008	515,123	9,745,914	9,345,131
Producing	9,206,885	400,208	8,806,677	515,123	9,722,008	9,321,800
Nonproducing	23,906	575	23,331		23,906	23,331
Lima—Indiana	524,187	48,997	475,190	86	524,273	475,276
Producing	520,889	48,997	471,892	86	520,975	471,978
Nonproducing	3,298		3,298		3,298	3,298
Illinois	405,235	10,513	394,722	30,063	435,298	424,785
Producing	396,135	10,513	385,622	30,063	426,198	415,685
Nonproducing	9,100		9,100		9,100	9,100
Mid-Continent	1,846,528	56,245	1,790,283	826,654	2,673,182	2,616,937
Producing	1,810,976	47,085	1,763,891	826,654	2,637,630	2,590,545
Nonproducing	35,552	9,160	26,392		35,552	26,392
Gulf	897,812	61,288	836,524	501	898,313	837,025
Producing	183,140	60,177	122,963	501	183,641	123,464
Nonproducing	714,672	1,111	713,561		714,672	713,561
California—Coastal and southern	141,342	61,772	79,570	1,398	142,740	80,968
Producing	82,344	29,751	52,593	1,218	83,562	53,811
Nonproducing	58,998	32,021	26,977	180	59,178	27,157
California—San Joaquin Valley	417,383	97,052	320,331	2,927	420,310	323,258
Producing	373,100	77,323	295,777	2,681	375,781	298,458
Nonproducing	44,283	19,729	24,554	246	44,529	24,800
Other fields [1]	346,661	25,626	321,035	900	347,561	321,935
Producing	121,369	12,214	109,155	900	122,269	110,055
Nonproducing	225,292	13,412	211,880		225,292	211,880

[1] Includes one operator in Tennessee, in order to avoid disclosing individual operations.

Land holdings, by character of organization.—Table 15 presents the figures for land controlled by producing enterprises in 1909, according to character of organization, by states.

Table 15

STATE.	GROSS ACREAGE: 1909 [1]								
	All classes.			Incorporated.			Unincorporated.		
	Aggregate.	Owned.	Held under lease.	Total.	Owned.	Held under lease.	Total.	Owned.	Held under lease.
United States	**14,072,064**	**686,268**	**13,385,798**	**12,458,500**	**405,813**	**12,052,687**	**1,613,564**	**280,455**	**1,333,109**
Arkansas	46,048	530	45,518	46,048	530	45,518			
California	459,343	107,074	352,269	453,183	103,309	349,874	6,160	3,765	2,395
Colorado	32,123	7,416	24,707	30,432	5,917	24,515	1,691	1,499	192
Illinois	426,198	10,513	415,685	371,883	9,054	362,829	54,315	1,459	52,856
Indiana	353,205	37,432	315,773	264,974	10,242	254,732	88,231	27,190	61,041
Kansas	539,115	14,365	524,750	514,243	8,531	505,712	24,872	5,834	19,038
Kentucky	289,236	2,034	287,202	268,048	742	267,306	21,188	1,292	19,896
Louisiana	96,331	17,336	78,995	95,847	16,886	78,961	484	450	34
Missouri	6,434	524	5,910	2,005	5	2,000	4,429	519	3,910
New York	226,078	50,243	175,835	136,283	6,984	129,299	89,795	43,259	46,536
Ohio	1,667,990	28,658	1,639,332	1,444,082	14,364	1,429,718	223,908	14,294	209,614
Oklahoma	1,777,386	17,529	1,759,857	1,677,428	10,305	1,667,123	99,958	7,224	92,734
Pennsylvania	2,851,803	308,540	2,543,263	2,181,910	149,023	2,032,887	669,893	159,517	510,376
Texas	408,439	58,032	350,407	379,257	50,949	328,308	29,182	7,083	22,099
West Virginia	4,854,671	22,298	4,832,373	4,555,213	15,228	4,539,985	299,458	7,070	292,388
Wyoming	6,150	3,230	2,920	6,150	3,230	2,920			
All other states [2]	31,514	514	31,000	31,514	514	31,000			

[1] Includes a duplication in the case of acreage sublet, which is shown in Table 16 by states.

[2] Includes operators distributed as follows: Michigan, 1; North Dakota, 1; Tennessee, 1.

This table shows that a very large proportion of the total reported acreage was held by incorporated enterprises. The proportion of leased land was greater for incorporated companies than for individuals and firms.

Table 16 shows the land sublet, by states, and this table may be used in connection with Table 15 to indicate in what states a possible duplication of figures for acreage occurs.

Table 16

STATE.	Acreage sublet: 1909
United States	1,377,226
California [1]	3,899
Colorado	900
Illinois	30,063
Kansas	36,909
Louisiana	15
New York	3,575
Ohio	16,914
Oklahoma	658,148
Pennsylvania	27,681
Texas	132,083
West Virginia	467,039

[1] In addition to figures given in this table, California reported 426 acres of nonproducing land sublet.

Concentration of control.—Tables 17 and 18 present summaries for operators of nonproducing and producing enterprises, respectively, classified according to the total area held by each operator, by fields.

As can be seen from Table 18, the control of oil and gas lands is highly concentrated, two-thirds of all producing land being held by the 24 operators, whose holdings exceeded 100,000 acres each.

Table 17

NUMBER OF ACRES CONTROLLED PER OPERATOR.	NONPRODUCING ENTERPRISES: 1909			
	Operators.		Land controlled.	
	Number.	Per cent of total.	Number of acres.	Per cent of total.
United States	[1] 245	100.0	[2] 1,115,527	100.0
Less than 100 acres	81	33.1	3,832	0.3
100 but less than 1,000	114	46.5	42,110	3.8
1,000 but less than 10,000	42	17.1	151,145	13.5
10,000 acres and over	8	3.3	918,440	82.3

[1] Exclusive of 15 operators who failed to report acreage.

[2] Includes duplication of acreage which was included by operators in land reported as leased by them and also sublet to other operators.

Table 18

FIELD AND NUMBER OF ACRES CONTROLLED PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Land controlled.	
	Number.	Per cent of total.	Number of acres.	Per cent of total.
United States	[1] 7,289	100.0	[2] 14,072,064	100.0
Less than 100 acres	3,485	47.8	150,060	1.1
100 but less than 1,000 acres	3,121	42.8	867,080	6.2
1,000 but less than 10,000 acres	571	7.8	1,490,211	10.6
10,000 but less than 100,000 acres	88	1.2	2,241,775	15.9
100,000 acres and over	24	0.3	9,322,938	66.3
Appalachian field	4,678	100.0	[2] 9,722,508	100.0
Less than 100 acres	2,389	51.1	102,002	1.0
100 but less than 1,000 acres	1,923	41.1	502,305	5.2
1,000 but less than 10,000 acres	292	6.2	786,861	8.1
10,000 but less than 100,000 acres	55	1.2	1,550,157	15.9
100,000 acres and over	19	0.4	6,781,183	69.7
Lima-Indiana field	1,043	100.0	[2] 520,975	100.0
Less than 100 acres	353	33.8	18,451	3.5
100 but less than 1,000 acres	602	57.7	169,433	32.5
1,000 but less than 10,000 acres	85	8.1	189,304	36.3
10,000 acres and over	3	0.3	143,787	27.6
Illinois field	304	100.0	[2] 426,198	100.0
Less than 100 acres	169	55.6	7,509	1.8
100 but less than 1,000 acres	112	36.8	31,594	7.4
1,000 but less than 10,000 acres	16	5.3	64,548	15.1
10,000 acres and over	7	2.3	322,547	75.7
Mid-Continent field	851	100.0	[2] 2,637,630	100.0
Less than 100 acres	333	35.0	16,792	0.6
100 but less than 1,000 acres	429	45.1	146,783	5.6
Mid-Continent field—Contd.				
1,000 but less than 10,000 acres	164	17.2	429,965	16.3
10,000 but less than 100,000 acres	20	2.1	585,964	22.2
100,000 acres and over	5	0.5	1,458,126	55.3
Gulf field	116	100.0	[2] 183,641	100.0
Less than 100 acres	91	78.4	1,213	0.7
100 but less than 1,000 acres	14	12.1	5,399	2.9
1,000 but less than 10,000 acres	6	5.2	11,606	6.3
10,000 acres and over	5	4.3	165,423	90.1
California—Coastal and southern field	108	100.0	[2] 83,562	100.0
Less than 100 acres	52	48.1	917	1.1
100 but less than 1,000 acres	37	34.3	13,121	15.7
1,000 acres and over	19	17.6	69,524	83.2
California—San Joaquin Valley field	195	100.0	[2] 375,781	100.0
Less than 100 acres	125	64.1	4,547	1.2
100 but less than 1,000 acres	58	29.7	15,216	4.0
1,000 but less than 10,000 acres	9	4.6	41,023	10.9
10,000 acres and over	3	1.5	314,995	83.8
Other fields	43	100.0	[2] 121,769	100.0
Less than 100 acres	14	32.6	444	0.4
100 but less than 1,000 acres	16	37.2	4,703	3.9
1,000 but less than 10,000 acres	9	20.9	21,301	17.5
10,000 acres and over	4	9.3	95,321	78.3

[1] Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields. Exclusive also of 504 operators who failed to report acreage.

[2] Includes duplication of acreage which was included by operators in land reported as leased by them and also sublet to other operators.

SCALE OF PRODUCTION.

Two different classifications of operators have been made to show, from different points of view, the size of the producing enterprises in the industry in 1909. The first classifies the operators according to value of products and the second according to the number of wage earners employed.

Classification of operators according to value of products.—Table 19 presents a classification of all operators of producing oil and gas wells according to value of products, by fields and states.[1]

This table discloses a considerable amount of concentration existing in the operation of petroleum and natural gas wells. The 19 operators, each of whom reported products valued at more than $1,000,000, together accounted for 46.2 per cent of the aggregate value of products. On the other hand the large number of small operators in the industry is remarkable; two-sevenths of the total number of operators reported products valued at less than $1,000 each.

---

[1] The value of products represents the sum of the values reported by the individual operators and includes a duplication resulting from the fact that some operators distributed natural gas purchased by them from other operators. There is a duplication of certain operators in the several states, owing to the fact that some operators owned wells in more than one state. This duplication has been eliminated from the statistics for the United States where the output of all enterprises controlled by the same operator in different states is combined into one total. In the several states, however, the partial value of products of the operators mentioned above, may fall within different groups than those within which their aggregate value of products are arranged for the United States.

CLASSIFICATION OF OPERATORS OF PRODUCING WELLS BY VALUE OF PRODUCTS, BY FIELDS AND STATES: 1909.

Table 19

FIELD OR STATE AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Number of operators.	Value of products.[1]	Per cent distribution.	
			Number of operators.	Value of products.
United States	[2] 7,783	$185,416,684	100.0	100.0
Less than $1,000	2,202	1,067,407	28.3	0.6
$1,000 but less than $5,000	3,244	7,823,301	41.6	4.2
$5,000 but less than $20,000	1,506	14,812,243	19.3	8.0
$20,000 but less than $100,000	638	26,924,025	8.2	14.5
$100,000 but less than $500,000	162	34,671,591	2.1	18.7
$500,000 but less than $1,000,000	22	14,526,445	0.3	7.8
$1,000,000 and over	19	85,591,672	0.2	46.2
Appalachian field	4,830	97,764,941	100.0	100.0
Less than $1,000	1,384	740,325	28.7	0.8
$1,000 but less than $5,000	2,277	5,392,839	47.1	5.5
$5,000 but less than $20,000	829	7,902,007	17.2	8.1
$20,000 but less than $100,000	254	10,255,495	5.3	10.5
$100,000 but less than $500,000	63	12,464,882	1.3	12.7
$500,000 but less than $1,000,000	8	5,508,912	0.2	5.6
$1,000,000 and over	15	55,500,481	0.3	56.8
Lima-Indiana field	1,275	6,027,776	100.0	100.0
Less than $1,000	589	222,330	46.2	3.7
$1,000 but less than $5,000	474	1,145,004	37.2	19.0
$5,000 but less than $20,000	170	1,598,086	13.3	26.5
$20,000 but less than $100,000	39	1,333,124	3.1	22.1
$100,000 and over	3	1,729,232	0.2	28.7
Illinois field	323	18,895,815	100.0	100.0
Less than $1,000	31	13,110	9.6	0.1
$1,000 but less than $5,000	115	315,770	35.6	1.7
$5,000 but less than $20,000	97	1,036,933	30.0	5.5
$20,000 but less than $100,000	50	2,298,001	15.5	12.2
$100,000 but less than $600,000	23	5,046,497	7.1	26.7
$500,000 and over	7	10,185,504	2.2	53.9
Mid-Continent field	994	26,058,280	100.0	100.0
Less than $1,000	130	65,840	13.1	0.3
$1,000 but less than $5,000	324	812,817	32.6	3.1
$5,000 but less than $20,000	321	3,318,413	32.3	12.7
$20,000 but less than $100,000	178	7,445,074	17.9	28.6
$100,000 but less than $500,000	34	6,058,751	3.4	23.3
$500,000 but less than $1,000,000	4	1,992,343	0.4	7.6
$1,000,000 and over	3	6,365,042	0.3	24.4
Gulf field	128	6,877,891	100.0	100.0
Less than $1,000	12	5,737	9.4	0.1
$1,000 but less than $5,000	20	67,109	15.6	1.0
$5,000 but less than $20,000	44	514,660	34.4	7.5
$20,000 but less than $100,000	41	1,680,526	32.0	24.4
$100,000 but less than $500,000	8	2,153,939	6.2	31.3
$500,000 and over	3	2,455,920	2.3	35.7
California — Coastal and sonthern field	144	7,009,700	100.0	100.0
Less than $1,000	27	14,239	18.8	0.2
$1,000 but less than $5,000	45	110,841	31.2	1.6
$5,000 but less than $20,000	35	311,145	24.3	4.4
$20,000 but less than $100,000	18	892,151	12.5	12.7
$100,000 and over	19	5,681,324	13.2	81.0
California—San Joaquin Valley field	198	22,300,635	100.0	100.0
Less than $1,000	25	9,944	12.6	(3)
$1,000 but less than $5,000	21	64,381	10.6	0.3
$5,000 but less than $20,000	41	451,996	20.7	2.0
$20,000 but less than $100,000	80	3,956,751	40.4	17.7
$100,000 but less than $500,000	24	4,988,801	12.1	22.4
$500,000 but less than $1,000,000	4	2,976,240	2.0	13.3
$1,000,000 and over	3	9,852,522	1.5	44.2
Other fields	50	481,648	100.0	100.0
Less than $1,000	19	6,118	38.0	1.3
$1,000 but less than $5,000	22	48,007	44.0	10.0
$5,000 but less than $20,000	4	25,565	8.0	5.3
$20,000 and over	5	401,958	10.0	83.5
California	339	29,310,335	100.0	100.0
Less than $1,000	52	24,183	15.3	0.1
$1,000 but less than $5,000	65	172,424	19.2	0.6
$5,000 but less than $20,000	76	763,141	22.4	2.6
$20,000 but less than $100,000	97	4,777,682	28.6	16.3
$100,000 but less than $500,000	40	8,697,030	11.8	29.7
$500,000 but less than $1,000,000	5	3,971,703	1.5	13.6
$1,000,000 and over	4	10,904,172	1.2	37.2
Colorado	23	317,680	100.0	100.0
Less than $1,000	9	4,261	39.1	1.3
$1,000 but less than $5,000	9	20,550	39.1	6.5
$5,000 and over	5	292,869	21.7	92.2
Illinois	323	$18,895,815	100.0	100.0
Less than $1,000	31	13,110	9.6	0.1
$1,000 but less than $5,000	115	315,770	35.6	1.7
$5,000 but less than $20,000	97	1,036,933	30.0	5.5
$20,000 but less than $100,000	50	2,298,001	15.5	12.2
$100,000 but less than $500,000	23	5,046,497	7.1	26.7
$500,000 and over	7	10,185,504	2.2	53.9
Indiana	644	3,224,619	100.0	100.0
Less than $1,000	386	105,020	59.9	3.3
$1,000 but less than $5,000	161	363,808	25.0	11.3
$5,000 but less than $20,000	78	769,236	12.1	23.9
$20,000 and over	19	1,986,555	3.0	61.6
Kansas	217	6,681,780	100.0	100.0
Less than $1,000	44	24,404	20.3	0.4
$1,000 but less than $5,000	90	209,452	41.5	3.1
$5,000 but less than $20,000	54	528,685	24.9	7.9
$20,000 but less than $100,000	26	1,105,568	12.0	16.5
$100,000 and over	3	4,813,671	1.4	72.0
Kentucky	85	892,281	100.0	100.0
Less than $1,000	33	16,359	38.8	1.8
$1,000 but less than $5,000	31	64,181	36.5	7.2
$5,000 but less than $20,000	12	109,625	14.1	12.3
$20,000 and over	9	702,116	10.6	78.7
Louisiana	31	2,177,986	100.0	100.0
Less than $1,000	5	2,462	16.1	0.1
$1,000 but less than $5,000	3	7,828	9.7	0.4
$5,000 but less than $20,000	12	128,935	38.7	5.9
$20,000 but less than $100,000	6	238,369	19.4	10.9
$100,000 and over	5	1,800,392	16.1	82.7
New York	708	2,668,996	100.0	100.0
Less than $1,000	269	136,441	38.0	5.1
$1,000 but less than $5,000	339	775,515	47.9	29.1
$5,000 but less than $20,000	81	718,892	11.4	26.9
$20,000 and over	19	1,038,148	2.7	38.9
Ohio	1,188	29,620,959	100.0	100.0
Less than $1,000	301	169,328	25.3	0.6
$1,000 but less than $5,000	542	1,397,382	45.6	4.7
$5,000 but less than $20,000	227	2,204,774	19.1	7.4
$20,000 but less than $100,000	93	3,569,159	7.8	12.0
$100,000 but less than $1,000,000	20	4,319,674	1.7	14.6
$1,000,000 and over	5	17,960,642	0.4	60.6
Oklahoma	711	17,685,092	100.0	100.0
Less than $1,000	67	33,452	9.4	0.2
$1,000 but less than $5,000	210	560,461	29.5	3.2
$5,000 but less than $20,000	254	2,645,888	35.7	15.0
$20,000 but less than $100,000	143	5,996,186	20.1	33.9
$100,000 but less than $500,000	33	5,760,115	4.6	32.6
$500,000 and over	4	2,688,990	0.6	15.2
Pennsylvania	3,030	39,197,475	100.0	100.0
Less than $1,000	918	498,874	30.3	1.3
$1,000 but less than $5,000	1,506	3,472,776	49.7	8.9
$5,000 but less than $20,000	478	4,463,895	15.8	11.4
$20,000 but less than $100,000	100	3,753,764	3.3	9.6
$100,000 but less than $500,000	19	4,113,227	0.6	10.5
$500,000 but less than $1,000,000	3	2,396,690	0.1	6.1
$1,000,000 and over	6	20,498,249	0.2	52.3
Texas	163	6,391,313	100.0	100.0
Less than $1,000	26	11,259	16.0	0.2
$1,000 but less than $5,000	41	102,185	25.2	1.6
$5,000 but less than $20,000	45	529,565	27.6	8.3
$20,000 but less than $100,000	44	1,785,477	27.0	27.9
$100,000 and over	7	3,962,827	4.3	62.0
West Virginia	442	28,188,087	100.0	100.0
Less than $1,000	65	36,333	14.7	0.1
$1,000 but less than $5,000	166	449,486	37.6	1.6
$5,000 but less than $20,000	122	1,220,596	27.6	4.3
$20,000 but less than $100,000	60	2,590,588	13.6	9.2
$100,000 but less than $500,000	22	4,241,389	5.0	15.0
$500,000 but less than $1,000,000	4	2,608,105	0.9	9.3
$1,000,000 and over	3	17,041,590	0.7	60.5
All other states[4]	28	164,266	100.0	100.0
Less than $1,000	9	1,817	32.1	1.1
$1,000 but less than $5,000	13	27,457	46.4	16.7
$5,000 and over	6	134,992	21.4	82.2

---

[1] Includes a duplication of $9,888,877 resulting from the purchase of natural gas by operators of gas wells.
[2] Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields or states.
[3] Less than one-tenth of 1 per cent.
[4] Includes operators distributed as follows: Arkansas, 3; Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Wyoming, 7.

Classification of operators according to the number of wage earners employed.—Table 20 presents a classification of all operators of producing petroleum and gas wells who reported regular wage earners, by the number of wage earners employed on December 15, 1909, or on the nearest representative day.[1]

Table 20

STATE AND NUMBER OF WAGE EARNERS PER OPERATOR.	PRODUCING ENTERPRISES EMPLOYING REGULAR WAGE EARNERS: 1909			
	Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.
United States	[1] 3,446	39,831	100.0	100.0
1 to 5	2,749	4,875	79.7	12.2
6 to 20	519	5,313	15.1	13.3
21 to 50	104	3,144	3.0	7.9
51 to 100	40	2,823	1.2	7.1
101 to 500	28	5,687	0.8	14.3
Over 500	8	17,989	0.2	46.2
California	279	7,007	100.0	100.0
1 to 5	97	304	34.8	4.3
6 to 20	132	1,470	47.3	21.0
21 to 50	30	969	10.8	13.8
51 to 100	7	497	2.5	7.1
Over 100	13	3,767	4.7	53.8
Illinois	272	4,059	100.0	100.0
1 to 5	219	337	80.5	8.3
6 to 20	37	423	13.6	10.4
21 to 50	7	263	2.6	6.5
51 to 100	6	430	2.2	10.6
Over 100	3	2,606	1.1	64.2
Indiana	182	1,345	100.0	100.0
1 to 6	158	277	86.8	20.6
6 to 20	20	216	11.0	16.1
Over 20	4	852	2.2	63.3
Kansas	119	1,302	100.0	100.0
1 to 5	105	166	88.2	12.7
6 to 20	8	107	6.7	8.2
21 to 50	3	78	2.5	6.0
Over 50	3	951	2.5	73.0
Ohio	532	5,897	100.0	100.0
1 to 5	436	761	82.0	12.9
6 to 20	75	716	14.1	12.1
Ohio—Continued.				
21 to 50	9	280	1.7	4.7
51 to 100	6	469	1.1	8.0
Over 100	6	3,671	1.1	62.3
Oklahoma	566	3,066	100.0	100.0
1 to 5	456	881	80.7	28.7
6 to 20	86	840	15.2	27.4
21 to 50	18	515	3.2	16.8
Over 50	5	830	0.9	27.1
Pennsylvania	984	7,397	100.0	100.0
1 to 5	884	1,434	89.8	19.4
6 to 20	68	643	6.9	8.7
21 to 50	19	631	1.9	8.5
51 to 100	3	227	0.3	3.1
101 to 500	7	1,269	0.7	17.2
Over 500	3	3,193	0.3	43.2
Texas	124	1,405	100.0	100.0
1 to 5	79	190	63.7	13.5
6 to 20	35	357	28.2	25.4
21 to 50	4	106	3.2	7.6
51 to 100	3	186	2.4	13.2
Over 100	3	566	2.4	40.3
West Virginia	264	7,093	100.0	100.0
1 to 5	194	353	73.5	5.0
6 to 20	49	541	18.6	7.6
21 to 50	11	325	4.2	4.6
51 to 100	6	452	2.3	6.4
Over 100	4	5,422	1.5	76.4
All other states[2]	233	1,260	100.0	100.0
1 to 5	190	320	81.5	25.4
6 to 20	32	278	13.7	22.1
21 to 50	7	224	3.0	17.8
Over 50	4	438	1.7	34.8

[1] Exclusive of duplications in the case of certain operators who reported enterprises in two or more states.

[2] Includes operators distributed as follows: Arkansas, 1; Colorado, 9; Kentucky, 39; Louisiana, 22; Michigan, 1; New York, 154; North Dakota, 1; Wyoming, 6.

This table emphasizes still more the high degree of concentration in the control of the industry. Eight operators in the United States employed on December 15, 1909, or the nearest representative day, 18,000 wage earners, or 45.2 per cent of the total number of regular wage earners employed in the industry.

Table 21 presents a classification of nonproducing petroleum and gas wells employing regular wage earners, according to the number of wage earners employed for 1909, for the United States and the state of California.

Table 21

STATE AND NUMBER OF WAGE EARNERS PER OPERATOR.	NONPRODUCING ENTERPRISES REPORTING REGULAR WAGE EARNERS: 1909			
	Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.
United States	203	1,451	100.0	100.0
1 to 5	101	372	49.8	25.6
6 to 20	95	795	46.8	54.8
Over 20	7	284	3.4	19.6
California	156	1,152	100.0	100.0
1 to 5	76	293	48.7	25.4
6 to 20	74	599	47.4	52.0
Over 20	6	260	3.8	22.6
All other states	47	299	100.0	100.0
1 to 5	25	79	53.2	26.4
6 to 20	21	196	44.7	65.6
Over 20	1	24	2.1	8.0

---

[1] There is a duplication of certain operators in the several states, owing to the fact that some operators owned wells in more than one state. This duplication has been eliminated from the statistics for the United States where the number of wage earners employed in enterprises controlled by the same operator in different states is combined into one total. In the several states, however, the number of wage earners employed in each of such enterprises may fall in different groups than those in which the aggregate number of wage earners are arranged for the United States.

MECHANICAL POWER.

A summary of mechanical power used in the operation and drilling of petroleum and gas wells is presented in Table 22. The statistics for electric power are not given in the general tables. Electric power was used very little, the total used amounting to but seven-tenths of 1 per cent of the aggregate horsepower. Of the total primary power, 160 horsepower was supplied by electricity rented from other establishments, 100 horsepower being reported from Pennsylvania and 30 horsepower each from California and West Virginia. In addition, 454 electric motors of 8,589 horsepower were run by current generated by the enterprises reporting them, of which 371 motors, of 7,416 horsepower, were in West Virginia.

Table 22 MECHANICAL POWER: 1909

CHARACTER OF OPERATIONS.	Number of operators.	Number of completed wells Dec. 31, 1909.		Primary power.												Electric motors run by current generated by the enterprise using.		
						Owned.												
							Steam engines.			Gas and gasoline engines.			Per cent of total horsepower owned.		Electric horsepower rented from other establishments.			
		Total.	Average per operator.	Aggregate horsepower	Average horsepower per operator.	Total horsepower.	Number.	Total horsepower.	Average horsepower per engine.	Number.	Total horsepower.	Average horsepower per engine.	Steam.	Gas and gasoline.		Number.	Total horsepower.	Average horsepower per motor.
All enterprises	[1] 8,053	166,448	21	1,230,546	153	1,230,366	37,231	754,720	20	21,794	475,666	22	61.3	38.7	160	454	8,589	19
Production only	5,206	56,265	11	286,782	55	286,782	10,945	171,847	16	4,866	114,935	24	59.9	40.1	......	8	127	16
Production and drilling of new wells	2,736	110,055	40	935,187	342	935,027	25,983	574,811	22	16,896	360,216	21	61.5	38.5	160	446	8,462	19
Nonproducing	260	128	(2)	8,577	33	8,577	303	8,062	27	32	515	16	94.0	6.0	......	......	......	......
Producing enterprises[3]	7,890	147,693	19	882,027	112	881,867	26,160	496,441	19	17,604	365,426	22	56.3	43.7	160	45	799	18
Petroleum	6,683	129,422	19	730,664	109	730,634	25,554	435,120	17	16,106	295,514	18	59.6	40.4	30	7	112	16
Production only	4,393	52,687	12	274,546	62	274,546	10,782	166,660	15	4,701	107,886	23	60.7	39.3	......	4	77	19
Production and drilling of new wells	2,290	76,735	34	456,118	199	456,088	14,772	268,460	18	11,405	187,628	16	58.9	41.1	30	3	35	12
Natural gas	1,207	18,271	15	151,363	125	151,233	606	61,321	101	1,498	89,912	60	40.5	59.5	130	38	687	18
Production only	797	3,258	4	9,916	12	9,916	85	3,493	41	132	6,423	49	35.2	64.8	......	4	50	12
Production and drilling of new wells	410	15,013	37	141,447	345	141,317	521	57,828	111	1,366	83,489	61	40.9	59.1	130	34	637	16

---

[1] Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

[2] Less than 1.

[3] Exclusive of 52 operators in Pennsylvania and West Virginia who could not be classified.

PART II.—PETROLEUM.

The data presented in this part are supplementary to the general statistics given in Part I. Tables 23 and 24 show the production of petroleum for the entire industry; the remaining tables in Part II relate to the petroleum branch of the industry which comprises all operators whose principal or only product was petroleum. The operators thus classified contributed 94.8 per cent of the total production of petroleum in the United States in 1909. Certain operators in Pennsylvania and West Virginia made reports which could not be classified according to principal product; these operators are not represented in the statistics given in this part, but since they contributed only 4.8 per cent of the total production of petroleum, their omission detracts but little from the value of the figures. Detailed statistics for the petroleum branch of the industry are presented in Table 50 at the end of this report.

PRODUCTION OF PETROLEUM.

This section presents the statistics for the production of petroleum. The accompanying diagram shows the production in 1909 graphically, by fields. The fields and states shown in the tables are arranged in descending order, according to the value of petroleum produced in 1909. Table 23 presents the statistics for the quantity and value of petroleum produced in 1909, by fields and states.

Table 23

FIELD AND STATE.	PETROLEUM PRODUCTION: 1909			
	Quantity.		Value at well.	
	Barrels.	Per cent distribution.	Total.	Per cent distribution.
United States	171,559,394	100.0	$117,696,529	100.0
Fields:				
Appalachian [1]	26,811,032	15.6	40,977,227	34.8
California—San Joaquin Valley	40,826,778	23.8	22,077,756	18.8
Illinois	29,146,231	17.0	18,329,637	15.6
Mid-Continent	49,128,533	28.6	18,250,632	15.5
California—Coastal and southern	11,277,375	6.6	6,989,033	5.9
Gulf	9,377,844	5.5	6,667,092	5.7
Lima—Indiana	4,673,964	2.7	4,079,482	3.5
Other fields [1]	317,637	0.2	325,670	0.3
Leading states:				
California	52,104,153	30.4	29,066,789	24.7
Illinois	29,146,231	17.0	18,329,637	15.6
Oklahoma	45,671,724	26.6	16,233,865	13.8
West Virginia	9,902,594	5.8	15,776,043	13.4
Pennsylvania	8,543,806	5.0	13,938,626	11.8
Ohio	9,263,948	5.4	11,302,653	9.6
Texas	8,682,868	5.1	6,196,951	5.3
Louisiana	2,889,919	1.7	1,976,007	1.7
New York	1,159,185	0.7	1,887,630	1.6
Indiana	2,079,977	1.2	1,741,475	1.5
Kansas	1,182,293	0.7	462,512	0.4
All other states [2]	932,696	0.5	784,341	0.7

[1] Tennessee is included in "Other fields" in order to avoid disclosing individual operations.

[2] Includes Arkansas, Colorado, Kentucky, Michigan, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

Considerable differences appear in this table in the proportion of the total quantity and the proportion of the total value of the product contributed by the different fields and states. Thus the fields and states in the East showed a larger percentage of the total value than of the total quantity, whereas the reverse is generally true of those in the middle West and far West. The greater rate of increase in quantity of product than in value, which is shown in Table 3, is due largely to the fact that in 1909 a greater portion of the crude petroleum than formerly was produced by the states of the middle and far West, where the average value per barrel was lower than in the East.

Production of Petroleum by Fields: 1909

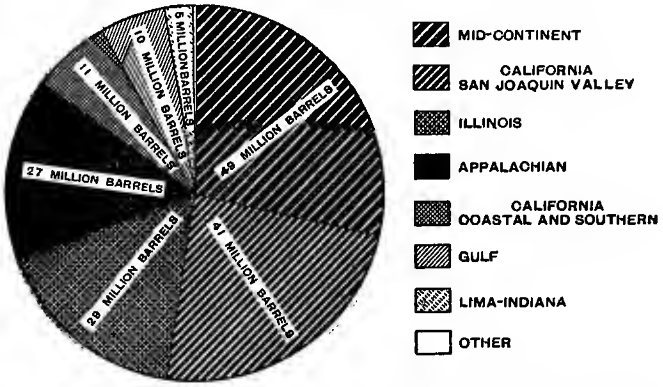


Table 24 gives the quantity of petroleum produced, by states, for each year from 1902 to 1909, inclusive. The figures for 1902 and 1909 are those reported by the Bureau of the Census. For the other years the figures are those compiled by the United States Geological Survey. The apparent decrease shown in 1909 is due to the differences in the methods employed by the two bureaus in compiling the statistics. As previously stated, the quantity of petroleum produced in 1909 as reported by the Survey was 182,134,274 barrels. The differences between the methods employed by the two bureaus do not affect in any essential degree, however, either the rank of the states or the per cent distribution for 1909.

Oklahoma, California, and Illinois showed marked increases in production for most of the years given in the table. In Ohio and Pennsylvania, on the other hand, the production of petroleum decreased continuously throughout the whole period; and West Virginia showed a decline until 1907, but an increase for the following two years. The year of greatest production in Indiana was 1904; in Texas, 1905; in Louisiana, 1906. The greatest relative decrease between the year of maximum production shown and 1909 took place in Indiana, in which state the production in 1909 was only one-fifth that in 1904, while the production in Texas in 1909 was only one-third of that in 1905.

Table 24

PETROLEUM PRODUCTION, BARRELS (42 GALLONS): 1902–1909.

STATE.	1909	1908	1907	1906	1905	1904	1903	1902
United States	**171,559,394**	**178,527,355**	**166,095,335**	**126,493,936**	**134,717,580**	**117,080,960**	**100,461,337**	**89,275,302**
California	52,104,153	44,854,737	39,748,375	33,098,598	33,427,473	29,649,434	24,382,472	13,984,268
Oklahoma	45,671,724	45,798,765	43,524,128	[1] 21,718,648	[1] 12,013,495	1,366,748	138,911	(2)
Illinois	29,146,231	33,686,238	24,281,973	4,397,050	181,084	......	......	(2)
West Virginia	9,902,594	9,523,176	9,095,296	10,120,935	11,578,110	12,644,686	12,899,395	13,513,345
Ohio	9,263,948	10,858,797	12,207,448	14,787,763	16,346,660	18,876,631	20,480,286	21,014,231
Texas	8,682,868	11,206,464	12,322,696	12,567,897	28,136,189	22,241,413	17,955,572	18,515,017
Pennsylvania	8,543,806	9,424,325	9,999,306	10,256,893	10,437,195	11,125,762	11,355,156	12,063,880
Louisiana	2,889,919	5,788,874	5,000,221	9,077,528	8,910,416	2,958,958	917,771	(2)
Indiana	2,079,977	3,283,629	5,128,037	7,673,477	10,964,247	11,339,124	9,186,411	7,480,896
Kansas	1,182,293	1,801,781	2,409,521	(3)	(3)	4,250,779	932,214	331,749
New York	1,159,185	1,160,128	1,212,300	1,243,517	1,117,582	1,113,264	1,162.978	1,119,730
All other states	932,696	1,140,441	1,166,034	1,551,630	1,605,129	1,514,161	1,050,171	1,252,186

STATE.	1909		1908		1907		1906		1905		1904		1903		1902	
	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.	Rank.[4]	Per cent distribution.
California	1	30.4	2	25.1	2	23.9	1	26.2	1	24.8	1	25.3	1	24.3	3	15.7
Oklahoma	2	26.6	1	25.7	1	26.2	2	[1] 17.2	4	[1] 8.9	9	1.2	12	0.1	12	(2)
Illinois	3	17.0	3	18.9	3	14.6	9	3.5	12	0.1	......	......	......	......	17	(2)
West Virginia	4	5.8	6	5.3	7	5.5	6	8.0	5	8.6	4	10.8	4	12.8	4	15.1
Ohio	5	5.4	5	6.1	5	7.3	3	11.7	3	12.1	3	16.1	2	20.4	1	23.5
Texas	6	5.1	4	6.3	4	7.4	4	9.9	2	20.9	2	19.0	3	17.9	2	20.7
Pennsylvania	7	5.0	7	5.3	6	6.0	5	8.1	7	7.8	6	9.5	5	11.3	5	13.5
Louisiana	8	1.7	8	3.2	9	3.0	7	7.2	8	6.6	8	2.5	9	0.9	8	(2)
Indiana	9	1.2	9	1.8	8	3.1	8	6.1	6	8.1	5	9.7	6	9.1	6	8.4
Kansas	10	0.7	10	1.0	10	1.5	......	(3)	......	(3)	7	3.6	8	0.9	10	0.4
New York	11	0.7	11	0.6	11	0.7	10	1.0	10	0.8	10	1.0	7	1.2	7	1.3
All other states	......	0.5	......	0.6	......	0.7	......	1.2	......	1.2	......	1.3	......	1.0	......	1.4

---

[1] Includes Kansas.

[2] Included in "All other states."

[3] Included with Oklahoma.

[4] The states shown in this table are given their actual ranking among all the states, even though the ranking of some states which can not be shown is higher than that of some of the states in the table. The rank of the less important states can not in all cases be given with absolute accuracy, though the ranking in the table is very close to the correct one.

CHARACTER OF ORGANIZATION.

General summary.—Table 25 shows the relative importance of the different forms of organization in the petroleum branch of the industry in 1909.

Although less than one-fourth of the operators were incorporated, they reported more than three-fourths of the wage earners and more than two-thirds of the total value of products for the industry. The incorporated operators employed an average of 13 wage earners and the value of their products averaged $51,619, while individual operators and firms averaged only 1 wage earner each and their average value of products was $4,601 and $5,735, respectively.

Table 25

CHARACTER OF ORGANIZATION.	PETROLEUM ENTERPRISES: 1909							
	Number of operators.	Number of wage earners.		Value of products.		Per cent distribution.		
		Total.	Average per operator.	Total.	Average per operator.	Number of operators.	Number of wage earners.	Value of products.
Total all classes	**6,683**	**24,033**	4	**$104,550,845**	**$15,644**	**100.0**	**100.0**	**100.0**
Individual	2,008	1,929	1	9,239,356	4,601	30.0	8.0	8.8
Firm	3,128	2,991	1	17,940,555	5,735	46.8	12.4	17.2
Corporation	1,437	18,621	13	74,176,585	51,619	21.5	77.5	70.9
Other	110	492	4	3,194,349	29,040	1.6	2.0	3.1

Detailed summary for incorporated and unincorporated operators.—Table 26 gives more detailed statistics for incorporated and unincorporated operators in the United States, with a further division of each of these classes according to the character of their operations.

In considering the average expenses per barrel shown in the table it should be taken into consideration that the average expenses per barrel for incorporated and unincorporated producers are affected by the method of management and of accounting. Such supervisory services, for instance, as are performed for corporations by salaried officers or managers, are often performed in whole or in part for unincorporated producers by proprietors and firm members, many of whom make no salary charges for these services, but look to the profits of the enterprise for their compensation. Indeed, a considerable number of such proprietors and firm members were returned as performing manual labor at their wells, although the expenses reported included no wage payments for this labor. The fact that the expense per barrel for the corporations was low in spite of these circumstances is no doubt attributable largely to the savings of large production.

Table 26

	PETROLEUM ENTERPRISES: 1909					
	Incorporated.			Unincorporated.		
	Total.	Engaged in—		Total.	Engaged in—	
		Production only.	Production and drilling of new wells.		Production only.	Production and drilling of new wells.
Number of operators	1,437	629	808	5,246	3,764	1,482
Number of wells:						
Completed Dec. 31, 1909	54,261	10,663	43,598	75,161	42,024	33,137
Drilled in 1909, total	6,111	1	6,110	5,340	....	5,340
Dry	915	1	914	675	....	675
Abandoned	2,852	482	2,370	1,295	682	613
Land controlled, gross acreage	3,960,637	330,243	3,630,394	1,028,947	482,461	546,486
Owned	237,911	20,768	217,143	217,377	129,778	87,599
Held under lease	3,722,726	309,475	3,413,251	811,570	352,683	458,887
Persons engaged in industry:						
Proprietors and firm members	....	....	....	13,064	8,846	4,218
Number performing manual labor	....	....	....	2,068	1,507	561
Salaried officers of corporations, superintendents, and managers	1,510	383	1,127	416	155	261
Clerks and other subordinate salaried employees	945	152	793	277	123	154
Wage earners, Dec. 15, 1909, or nearest representative day	18,621	1,481	17,140	5,412	1,986	3,426
Capital	$264,873,166	$29,362,934	$235,510,232	$95,548,890	$45,841,181	$49,707,709
Expenses of operation and development	$59,042,920	$3,587,661	$55,455,259	$20,705,924	$4,572,912	$16,133,012
Services:						
Salaried officers of corporations, superintendents, and managers	$2,318,890	$343,002	$1,975,888	$456,918	$134,512	$322,406
Clerks and other subordinate salaried employees	$861,586	$59,285	$802,301	$122,806	$47,428	$75,378
Wage earners	$14,903,454	$1,110,345	$13,793,109	$3,934,286	$1,332,048	$2,602,238
Supplies, fuel, and rent of power	[1] $22,779,547	$691,840	$22,087,707	[1] $6,335,080	$785,190	$5,549,890
Miscellaneous:						
Contract work, including compensation of part-time employees	$4,981,669	$143,027	$4,838,642	$4,399,151	$614,498	$3,784,653
Royalties and rent of wells	$8,542,163	$879,750	$7,662,413	$3,967,018	$1,247,706	$2,719,312
Rent of offices and other sundry expenses	$4,655,611	$360,412	$4,295,199	$1,490,665	$411,530	$1,079,135
Per cent distribution:						
Salaries	5.4	11.2	5.0	2.8	4.0	2.5
Wages	25.2	30.9	24.9	19.0	29.1	16.1
Supplies, fuel, and rent of power	38.6	19.3	39.8	30.6	17.2	34.4
Contract work	8.4	4.0	8.7	21.2	13.4	23.5
Royalties and rent of wells	14.5	24.5	13.8	19.2	27.3	16.9
Rent of offices and other sundry expenses	7.9	10.0	7.7	7.2	9.0	6.7
Average per barrel of petroleum:						
Total	$0.463	$0.275	$0.485	$0.590	$0.413	$0.671
Salaries	$0.025	$0.031	$0.024	$0.017	$0.016	$0.017
Wages	$0.117	$0.085	$0.121	$0.112	$0.120	$0.108
Supplies, fuel, and rent of power	$0.179	$0.053	$0.193	$0.180	$0.071	$0.231
Contract work	$0.039	$0.011	$0.042	$0.125	$0.056	$0.157
Royalties and rent of wells	$0.067	$0.068	$0.067	$0.113	$0.113	$0.113
Rent of offices and other sundry expenses	$0.037	$0.028	$0.038	$0.042	$0.037	$0.045
Products:						
Total value	$74,176,585	$6,908,456	$67,268,129	$30,374,260	$11,304,382	$19,069,878
Petroleum:						
Barrels (42 gals.)	127,472,892	13,028,717	114,444,175	35,108,516	11,069,695	24,038,821
Value at wells	$73,473,513	$6,847,857	$66,625,656	$30,127,243	$11,243,154	$18,884,089
Average per barrel	$0.576	$0.526	$0.582	$0.858	$1.016	$0.786

---

[1] The cost of purchased gas amounting to $3,946 was distributed as follows: Incorporated organizations, $3,862; unincorporated organizations, $84.

Table 27 presents detailed statistics for producing petroleum enterprises for 1909, by fields, classified in the same way as those shown in Table 26 for the United States.

PRINCIPAL STATISTICS FOR PETROLEUM ENTERPRISES: 1909.

Table 27

	FIELD, FORM OF ORGANIZATION, AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.				
			Completed Dec. 31, 1909.	Drilled in 1909.		Aban-doned.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.
				Total.	Dry.		Total.	Number performing manual labor.			
	Appalachian:										
1	Incorporated	346	21,704	1,316	260	811	....	....	275	96	3,146
2	Production only	158	3,093	....	....	45	....	....	76	16	324
3	Production and drilling of new wells	188	18,611	1,316	260	766	....	....	199	80	2,822
4	Unincorporated	3,911	56,135	3,440	423	615	9,764	1,752	173	118	3,040
5	Production only	2,840	30,880	....	....	243	6,669	1,278	73	66	1,253
6	Production and drilling of new wells	1,071	25,255	3,440	423	372	3,095	474	100	52	1,787
	Lima-Indiana:										
7	Incorporated	151	9,819	225	34	1,449	....	....	101	42	1,163
8	Production only	113	3,574	....	....	343	....	....	61	23	295
9	Production and drilling of new wells	38	6,245	225	34	1,106	....	....	40	19	868
10	Unincorporated	630	10,909	296	46	523	1,463	199	35	20	547
11	Production only	531	8,124	....	....	384	1,220	165	17	13	318
12	Production and drilling of new wells	99	2,785	296	46	139	243	34	18	7	229
	Illinois:										
13	Incorporated	80	8,318	1,829	272	141	....	....	122	68	3,437
14	Production only	28	525	....	....	1	....	....	18	9	62
15	Production and drilling of new wells	52	7,793	1,829	272	140	....	....	104	59	3,375
16	Unincorporated	231	2,497	666	102	42	809	22	58	43	578
17	Production only	98	682	....	....	4	328	10	11	11	97
18	Production and drilling of new wells	133	1,815	666	102	38	481	12	47	32	481
	Mid-Continent:										
19	Incorporated	523	9,565	1,668	175	239	....	....	416	264	2,769
20	Production only	250	2,886	1	1	83	....	....	142	72	424
21	Production and drilling of new wells	273	6,679	1,667	174	156	....	....	274	192	2,345
22	Unincorporated	328	4,765	724	49	76	706	39	99	75	680
23	Production only	206	1,847	....	....	41	437	23	39	27	213
24	Production and drilling of new wells	122	2,918	724	49	35	269	16	60	48	467
	Gulf:										
25	Incorporated	60	1,000	358	114	142	....	....	84	80	1,239
26	Production only	11	34	....	....	....	....	....	13	10	88
27	Production and drilling of new wells	49	966	358	114	142	....	....	71	70	1,151
28	Unincorporated	62	306	173	53	31	197	39	28	6	306
29	Production only	21	56	....	....	2	101	16	6	....	40
30	Production and drilling of new wells	41	250	173	53	29	96	23	22	6	266
	California—Coastal and southern:										
31	Incorporated	83	1,113	100	8	31	....	....	137	104	1,613
32	Production only	27	248	....	....	6	....	....	17	8	48
33	Production and drilling of new wells	56	865	100	8	25	....	....	120	96	1,565
34	Unincorporated	56	445	11	....	8	77	13	14	10	125
35	Production only	53	396	....	....	8	73	12	8	6	51
36	Production and drilling of new wells	3	49	11	....	....	4	1	6	4	74
	California—San Joaquin Valley:										
37	Incorporated	178	2,645	571	25	30	....	....	368	291	5,117
38	Production only	34	271	....	....	3	....	....	53	14	229
39	Production and drilling of new wells	144	2,374	571	25	27	....	....	315	277	4,888
40	Unincorporated	14	83	25	....	....	29	....	9	5	131
41	Production only	4	24	....	....	....	5	....	1	....	12
42	Production and drilling of new wells	10	59	25	....	....	24	....	8	5	119
	Other:										
43	Incorporated	16	97	44	27	9	....	....	7	....	137
44	Production only	8	32	....	....	1	....	....	3	....	11
45	Production and drilling of new wells	8	65	44	27	8	....	....	4	....	126
46	Unincorporated	14	21	5	2	....	19	4	....	....	5
47	Production only	11	15	....	....	....	13	3	....	....	2
48	Production and drilling of new wells	3	6	5	2	....	6	1	....	....	3

Table 27—Continued.

	FIELD, FORM OF ORGANIZATION AND CHARACTER OF OPERATIONS.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.							
			Total.	Services.			Supplies, fuel, and rent of power.	Miscellaneous.		
				Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.		Contract work.[1]	Royalties and rent of wells.	Other.
	Appalachian:									
1	Incorporated	$26,127,668	$8,967,230	$312,285	$83,084	$2,082,208	$2,789,083	$1,552,976	$1,370,490	$777,104
2	Production only	6,424,587	704,598	57,877	8,218	214,725	152,036	35,863	161,830	74,049
3	Production and drilling of new wells	19,703,081	8,262,632	254,408	74,866	1,867,483	2,637,047	1,517,113	1,208,660	703,055
4	Unincorporated	64,232,076	10,405,226	153,918	43,086	2,048,505	[2] 3,216,291	2,695,661	1,685,501	562,264
5	Production only	32,858,127	2,823,841	63,763	25,724	790,467	553,195	433,506	710,748	246,438
6	Production and drilling of new wells	31,373,949	7,581,385	90,155	17,362	1,258,038	[2] 2,663,096	2,262,155	974,753	315,826
	Lima-Indiana:									
7	Incorporated	7,067,453	1,827,105	96,113	22,533	712,476	[2] 324,059	151,452	271,393	249,079
8	Production only	3,812,981	499,815	39,164	7,828	201,461	[2] 71,577	25,533	109,398	44,854
9	Production and drilling of new wells	3,254,472	1,327,290	56,949	14,705	511,015	252,482	125,919	161,995	204,225
10	Unincorporated	8,251,539	1,446,618	24,606	9,870	365,647	288,822	342,642	312,602	102,429
11	Production only	5,668,272	680,074	8,666	3,780	221,543	75,731	112,370	195,751	62,233
12	Production and drilling of new wells	2,583,267	766,544	15,940	6,090	144,104	213,091	230,272	116,851	40,196
	Illinois:									
13	Incorporated	26,123,349	9,630,450	271,350	69,617	2,162,555	2,955,406	1,534,644	1,911,004	725,874
14	Production only	993,491	154,869	15,337	3,812	38,664	28,835	2,479	51,704	14,038
15	Production and drilling of new wells	25,129,858	9,475,581	256,013	65,805	2,123,891	2,926,571	1,532,165	1,859,300	711,836
16	Unincorporated	7,659,103	3,692,228	53,699	17,369	438,576	1,133,208	740,585	842,557	466,234
17	Production only	1,471,099	277,847	7,507	2,893	66,845	21,449	16,123	138,405	24,625
18	Production and drilling of new wells	6,088,004	3,414,381	46,192	14,476	371,731	1,111,759	724,462	704,152	441,609
	Mid-Continent:									
19	Incorporated	53,435,338	10,503,402	571,290	170,497	2,089,888	[2] 3,161,919	1,456,850	2,158,423	894,535
20	Production only	11,573,893	1,189,726	124,138	25,781	333,121	171,050	62,500	325,069	148,067
21	Production and drilling of new wells	41,861,445	9,313,676	447,152	144,716	1,756,767	[2] 2,990,869	1,394,350	1,833,354	746,468
22	Unincorporated	10,952,711	2,902,083	131,298	33,636	544,717	838,501	550,945	538,083	264,903
23	Production only	4,298,965	508,857	36,344	10,951	161,040	75,241	36,851	130,807	57,623
24	Production and drilling of new wells	6,653,746	2,393,226	94,954	22,685	383,677	763,260	514,094	407,276	207,280
	Gulf:									
25	Incorporated	10,081,804	3,843,515	164,301	181,444	1,262,927	1,189,059	17,173	753,232	275,379
26	Production only	1,327,690	115,335	15,412	6,140	60,027	18,690		6,884	8,182
27	Production and drilling of new wells	8,754,114	3,728,180	148,889	175,304	1,202,900	1,170,369	17,173	746,348	267,197
28	Unincorporated	1,407,974	1,047,262	43,995	6,090	295,493	414,828	50,605	197,083	39,168
29	Production only	167,400	98,310	6,400		35,134	20,425	5,063	26,641	4,647
30	Production and drilling of new wells	1,240,574	948,952	37,595	6,090	260,359	394,403	45,542	170,442	34,521
	California—Coastal and southern:									
31	Incorporated	30,611,450	5,353,994	233,977	71,161	1,483,695	[2] 2,685,168	59,538	501,881	318,574
32	Production only	1,576,091	143,013	12,935	1,626	43,797	31,726	15,347	22,666	14,916
33	Production and drilling of new wells	29,035,359	5,210,981	221,042	69,535	1,439,898	[2] 2,653,442	44,191	479,215	303,658
34	Unincorporated	2,070,651	446,337	34,697	8,880	113,919	220,081	8,789	20,312	39,659
35	Production only	1,075,751	126,367	10,932	4,080	39,815	29,981	8,789	19,016	13,754
36	Production and drilling of new wells	994,900	319,970	23,765	4,800	74,104	190,100		1,296	25,905
	California—San Joaquin Valley:									
37	Incorporated	109,675,104	18,547,096	655,850	263,250	4,987,561	9,503,708	194,580	1,568,625	1,373,522
38	Production only	3,226,201	769,775	75,815	5,880	215,169	216,147	240	201,978	54,546
39	Production and drilling of new wells	106,448,903	17,777,321	580,035	257,370	4,772,392	9,287,561	194,340	1,366,647	1,318,976
40	Unincorporated	932,536	752,592	14,705	3,875	123,351	217,898	7,278	369,958	15,527
41	Production only	168,267	52,824	900		16,129	8,417		25,416	1,962
42	Production and drilling of new wells	764,269	699,768	13,805	3,875	107,222	209,481	7,278	344,542	13,565
	Other:									
43	Incorporated	1,751,000	370,128	13,724		122,144	171,145	14,456	7,115	41,544
44	Production only	428,000	10,530	2,324		3,381	1,779	1,065	221	1,760
45	Production and drilling of new wells	1,323,000	359,598	11,400		118,763	169,366	13,391	6,894	39,784
46	Unincorporated	142,300	13,578			4,078	5,451	2,646	922	481
47	Production only	133,300	4,792			1,075	751	1,796	922	248
48	Production and drilling of new wells	9,000	8,786			3,003	4,700	850		233

---

[1] The cost of contract work includes compensation of part-time employees.

[2] The cost of purchased gas amounting to $3,946 was distributed among the several fields as follows: Appalachian, $84; Lima-Indiana, $288; Mid-Continent, $2,740; California-Coastal and southern, $834.

PETROLEUM ENTERPRISES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.													PRODUCTS.			
	Per cent distribution.						Average expense per barrel.							Total value.	Petroleum.		
															Barrels (42 gallons).	Value at well.	
	Salaries.	Wages.	Supplies, fuel, and rent of power.	Contract work.[1]	Royalties and rent of wells.	Other miscellaneous.	Total.	Salaries.	Wages.	Supplies, fuel, and rent of power.	Contract work.[1]	Royalties and rent of wells.	Other miscellaneous.			Total.	Average per barrel.
1	4.4	23.2	31.1	17.3	15.3	8.7	$1.137	$0.050	$0.264	$0.354	$0.197	$0.174	$0.098	$10,688,612	7,889,440	$10,578,374	$1.341
2	9.4	30.5	21.6	5.1	23.0	10.5	0.805	0.075	0.245	0.174	0.041	0.185	0.085	1,323,510	875,391	1,314,603	1.502
3	4.0	22.6	31.9	18.4	14.6	8.5	1.178	0.047	0.266	0.376	0.216	0.172	0.100	9,365,102	7,014,049	9,263,771	1.321
4	1.9	19.7	30.9	25.9	16.2	5.4	1.011	0.019	0.199	0.313	0.262	0.164	0.055	16,618,172	10,287,853	16,473,922	1.601
5	3.2	28.0	19.6	15.4	25.2	8.7	0.613	0.019	0.171	0.120	0.094	0.154	0.053	7,448,785	4,609,758	7,394,978	1.604
6	1.4	16.6	35.1	29.8	12.9	4.2	1.335	0.019	0.222	0.469	0.398	0.172	0.056	9,169,387	5,678,095	9,078,944	1.599
7	6.5	39.0	17.7	8.3	14.9	13.6	0.840	0.055	0.328	0.149	0.070	0.125	0.115	1,905,072	2,173,959	1,898,856	0.873
8	9.4	40.3	14.3	5.1	21.9	9.0	0.622	0.059	0.251	0.089	0.032	0.136	0.056	716,540	802,958	712,493	0.887
9	5.4	38.5	19.0	9.5	12.2	15.4	0.968	0.052	0.373	0.184	0.092	0.118	0.149	1,188,532	1,371,001	1,186,363	0.865
10	2.4	25.3	20.0	23.7	21.6	7.1	0.586	0.014	0.148	0.117	0.139	0.127	0.041	2,165,008	2,468,174	2,152,538	0.872
11	1.8	32.6	11.1	16.5	28.8	9.2	0.443	0.008	0.144	0.049	0.073	0.127	0.040	1,363,348	1,536,843	1,360,153	0.885
12	2.9	18.8	27.8	30.0	15.2	5.2	0.823	0.024	0.155	0.229	0.247	0.125	0.043	801,660	931,331	792,385	0.851
13	3.5	22.5	30.7	15.9	19.8	7.5	0.461	0.016	0.103	0.141	0.073	0.091	0.035	13,380,700	20,895,999	13,171,013	0.630
14	12.4	25.0	18.6	1.6	33.4	9.1	0.291	0.036	0.073	0.054	0.005	0.097	0.026	336,425	532,407	336,126	0.631
15	3.4	22.4	30.9	16.2	19.6	7.5	0.465	0.016	0.104	0.144	0.075	0.091	0.035	13,044,275	20,363,592	12,834,887	0.630
16	1.9	11.9	30.7	20.1	22.8	12.6	0.448	0.009	0.053	0.137	0.090	0.102	0.057	5,184,360	8,242,128	5,153,489	0.625
17	3.7	24.1	7.7	5.8	49.8	8.9	0.206	0.008	0.049	0.016	0.012	0.102	0.018	850,434	1,351,529	849,786	0.629
18	1.8	10.9	32.6	21.2	20.6	12.9	0.496	0.009	0.054	0.161	0.105	0.102	0.064	4,333,926	6,890,599	4,303,703	0.625
19	7.1	19.9	30.1	13.9	20.5	8.5	0.272	0.019	0.054	0.082	0.038	0.056	0.023	14,685,353	38,672,271	14,393,378	0.372
20	12.6	28.0	14.4	5.3	27.3	12.4	0.158	0.020	0.044	0.023	0.008	0.043	0.020	2,729,936	7,545,357	2,693,158	0.357
21	6.4	18.9	32.1	15.0	19.7	8.0	0.299	0.019	0.056	0.096	0.045	0.059	0.024	11,955,417	31,126,914	11,700,220	0.376
22	5.7	18.8	28.9	19.0	18.5	9.1	0.286	0.016	0.054	0.083	0.054	0.053	0.026	3,763,858	10,152,750	3,720,835	0.366
23	9.3	31.6	14.8	7.2	25.7	11.3	0.188	0.017	0.059	0.028	0.014	0.048	0.021	1,053,670	2,711,893	1,051,212	0.388
24	4.9	16.0	31.9	21.5	17.0	8.7	0.322	0.016	0.052	0.103	0.069	0.055	0.028	2,710,188	7,440,857	2,669,623	0.359
25	9.0	32.9	30.9	0.4	19.6	7.2	0.509	0.046	0.167	0.158	0.002	0.100	0.037	5,359,585	7,544,213	5,356,803	0.710
26	18.7	52.0	16.2	....	6.0	7.1	0.302	0.056	0.157	0.049	....	0.018	0.021	259,556	381,624	258,393	0.677
27	8.7	32.3	31.4	0.5	20.0	7.2	0.521	0.045	0.168	0.163	0.002	0.104	0.037	5,100,029	7,162,589	5,098,410	0.712
28	4.8	28.2	39.6	4.8	18.8	3.7	0.571	0.027	0.161	0.226	0.028	0.107	0.021	1,319,259	1,833,631	1,310,289	0.715
29	6.5	35.7	20.8	5.2	27.1	4.7	0.378	0.025	0.135	0.079	0.019	0.102	0.018	190,122	259,981	189,942	0.731
30	4.6	27.4	41.6	4.8	18.0	3.6	0.603	0.028	0.165	0.251	0.029	0.108	0.022	1,129,137	1,573,650	1,120,347	0.712
31	5.7	27.7	50.2	1.1	9.4	6.0	0.517	0.029	0.143	0.259	0.006	0.048	0.031	6,402,361	10,362,285	6,390,215	0.617
32	10.2	30.6	22.2	10.7	15.8	10.4	0.502	0.051	0.154	0.111	0.054	0.079	0.052	212,885	285,117	207,787	0.729
33	5.6	27.6	50.9	0.8	9.2	5.8	0.517	0.029	0.143	0.263	0.004	0.048	0.030	6,189,476	10,077,168	6,182,428	0.614
34	9.8	25.5	49.3	2.0	4.6	8.9	0.488	0.048	0.124	0.241	0.010	0.022	0.043	606,151	915,090	598,818	0.654
35	11.9	31.5	23.7	7.0	15.0	10.9	0.333	0.040	0.105	0.079	0.023	0.050	0.036	265,745	379,767	264,805	0.697
36	8.9	23.2	59.4	....	0.4	8.1	0.598	0.053	0.138	0.355	....	0.002	0.048	340,406	535,323	334,013	0.624
37	5.0	26.9	51.2	1.0	8.5	7.4	0.468	0.023	0.126	0.240	0.005	0.040	0.035	21,449,211	39,641,072	21,383,740	0.539
38	10.6	28.0	28.1	(3)	26.2	7.1	0.296	0.031	0.083	0.083	(4)	0.078	0.021	1,314,496	2,597,335	1,314,496	0.506
39	4.7	26.8	52.2	1.1	7.7	7.4	0.480	0.023	0.129	0.251	0.005	0.037	0.036	20,134,715	37,043,737	20,069,244	0.542
40	2.5	16.4	28.9	1.0	49.2	2.1	0.635	0.016	0.104	0.184	0.006	0.312	0.013	694,016	1,185,706	694,016	0.585
41	1.7	30.5	15.9	....	48.1	3.7	0.255	0.004	0.078	0.041	....	0.123	0.009	118,394	207,415	118,394	0.571
42	2.5	15.3	29.9	1.1	49.2	1.9	0.715	0.018	0.110	0.214	0.007	0.352	0.014	575,622	978,291	575,622	0.588
43	3.7	33.0	46.2	3.9	1.9	11.2	1.260	0.047	0.416	0.583	0.049	0.024	0.141	305,691	293,653	301,134	1.025
44	22.1	32.1	16.9	10.1	2.1	16.7	1.235	0.273	0.396	0.209	0.125	0.026	0.206	15,108	8,528	10,801	1.267
45	3.2	33.0	47.1	3.7	1.9	11.1	1.261	0.040	0.417	0.594	0.047	0.024	0.140	290,583	285,125	290,333	1.018
46	....	30.0	40.1	19.5	6.8	3.5	0.586	....	0.176	0.235	0.114	0.040	0.021	23,436	23,184	23,336	1.007
47	....	22.4	15.7	37.5	19.2	5.2	0.383	....	0.086	0.060	0.144	0.074	0.020	13,884	12,509	13,884	1.110
48	....	34.2	53.5	9.7	....	2.7	0.823	....	0.281	0.440	0.080	....	0.022	9,552	10,675	9,452	0.885

[3] Less than one-tenth of 1 per cent.
[4] Less than 1 mill.

SCALE OF PRODUCTION.

Classification of operators according to value of products.—Table 28 classifies all operators whose only, or principal, product in 1909 was petroleum, according to the value of products reported.

Table 28 VALUE OF PRODUCTS PER OPERATOR.	PETROLEUM ENTERPRISES: 1909			
	Number of operators.	Value of products.	Per cent distribution.	
			Number of operators.	Value of products.
Total	**6,683**	**$104,550,845**	**100.0**	**100.0**
Less than $1,000	1,652	906,255	24.7	0.9
$1,000 but less than $5,000	2,996	7,210,678	44.8	6.9
$5,000 but less than $20,000	1,344	13,082,807	20.1	12.5
$20,000 but less than $100,000	535	22,319,954	8.0	21.3
$100,000 but less than $500,000	130	26,465,454	1.9	25.3
$500,000 but less than $1,000,000	17	11,090,001	0.3	10.6
$1,000,000 and over	9	23,475,696	0.1	22.5

This table indicates the extent to which petroleum production was controlled by a few large operators. Two-thirds of the operators who reported products to the value of less than $5,000 each, contributed only 7.8 per cent of the total value of products for the petroleum branch of the industry. On the other hand, 9 operators, each of whom reported products valued at $1,000,000 or over, contributed 22.5 per cent of the total value of products. More than one-half of the total value of products (58.4 per cent) was contributed by 156 operators, or 2.3 per cent of the total number, each of whom reported an output valued at more than $100,000.

Classification of operators according to the number of wage earners employed.—The following table classifies all operators who reported regular wage earners in 1909 according to the number of wage earners employed per operator.

Table 29 NUMBER OF WAGE EARNERS PER OPERATOR.	PETROLEUM ENTERPRISES REPORTING REGULAR WAGE EARNERS: 1909			
	Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.
Total	**3,185**	**24,033**	**100.0**	**100.0**
1 to 5	2,569	4,543	80.7	18.9
6 to 20	470	4,784	14.8	19.9
21 to 50	91	2,840	2.9	11.8
51 to 100	27	1,759	0.8	7.3
101 to 500	23	4,340	0.7	18.1
Over 500	5	5,767	0.2	24.0

Of the 6,683 operators whose only, or principal, product was petroleum, 3,498, or more than one-half, did not report regular wage earners. The 55 operators with more than 50 wage earners each, constituted only 1.7 per cent of the total number employing regular wage earners but employed almost one-half of all wage earners reported.

PART III.—NATURAL GAS.

The natural gas branch of the industry includes those enterprises whose principal, or only, product was natural gas. Certain enterprises in the states of Pennsylvania and West Virginia whose reports could not be classified according to the principal products are not included, although these enterprises contributed 26.5 per cent of the total production of natural gas in the United States. The enterprises which could be definitely classified and for which data are presented in Part III contributed 70.5 per cent of the total production of natural gas.[1]

Detailed statistics of the natural gas branch of the industry as defined here will be found in Table 51 at the end of this report.

Tables 30, 31, and 32, which treat of the production and consumption of natural gas, show the disposition made of the entire amount of natural gas for which any specific disposal was reported, whether the gas was produced by enterprises engaged primarily in the production of petroleum, by those engaged primarily in gas production, or by the unclassified enterprises. The remaining tables in Part III relate only to the natural gas branch of the industry.

PRODUCTION AND CONSUMPTION OF NATURAL GAS.

The accompanying diagram shows graphically the production of natural gas in the United States in 1909, by states.

Table 30 shows the value of natural gas sold by producers in 1909, classified according to the method of disposition, whether metered or sold at flat rate, and further classified according to the character of consumption, whether supplied for domestic use, for manufacturing or other purposes, or to other gas producers or distributing companies. The table also shows the value of gas purchased.

Production of Natural Gas: 1909.

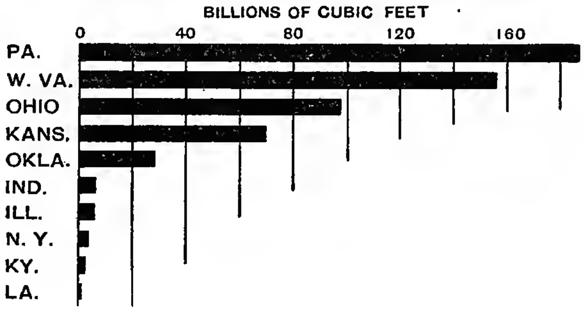


Table 30

STATE.	VALUE OF ALL NATURAL GAS SOLD BY PRODUCERS: 1909								
	Gross sales.	Metered.	Sold at flat rate.	Sold direct to consumers.			Sold to other gas producers or to distributing companies.	Value of gas purchased.	Net sales.
				For domestic use.	For manufacturing purposes.	For all other purposes.			
United States	**$67,560,193**	[1]**$67,114,713**	[1] **$445,480**	**$27,437,481**	**$20,377,246**	**$1,680,341**	**$18,065,125**	**$9,888,877**	[1] **$57,671,316**
Arkansas	126,400	126,400	....	11,279	37,539	1,000	76,582	....	126,400
California	171,894	167,450	4,444	157,722	192	8,596	5,384	4,150	167,744
Illinois	563,619	556,117	7,502	241,950	82,320	108,833	130,516	12,713	550,906
Indiana	1,479,381	1,464,570	14,811	828,308	113,108	10,904	527,061	22,595	1,456,786
Kansas	6,217,730	6,121,971	95,759	1,098,673	1,579,467	19,695	3,519,895	269,545	5,948,185
Kentucky	480,245	476,209	4,036	414,010	63,880	2,355	....	....	480,245
Louisiana	200,666	51,707	148,959	28,743	18,455	2,069	151,399	7,200	193,466
New York	776,357	767,992	8,365	619,102	36,639	7,660	112,956	65,656	710,701
Ohio	[2] 18,270,378	18,270,378	([2])	11,981,686	4,668,423	156,154	1,485,819	[2] 5,376,075	[2] 12,894,303
Oklahoma	1,448,926	1,371,399	77,527	327,256	286,205	110,627	724,838	130,587	1,318,339
Pennsylvania	25,231,805	25,208,080	23,725	10,034,573	11,075,773	599,780	3,521,679	3,071,379	22,160,426
Texas	137,333	137,333	....	62,946	23,583	12,527	38,277	35,313	102,020
West Virginia	[2] 12,430,133	12,371,153	[2] 58,980	1,614,517	2,388,631	639,074	7,766,207	[2] 893,664	[2] 11,536,469
All other states [3]	25,326	23,954	1,372	16,716	3,031	1,067	4,512	....	25,326

[1] Net sales are exclusive of $45,204, representing the value of gas obtained as a by-product of oil wells, for which the method of disposition was not reported. Of this amount, $17,583 was reported as the value of metered gas, and $27,621 the value of gas sold at flat rate.

[2] The figures for gas purchased or sold at flat rate in Ohio are included with the figures for West Virginia. The total value of gas sold at flat rate in the two states combined, however, was only $58,980.

[3] Includes states as follows: Colorado, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

The net sales shown in this table represent the total value of gas sold to consumers or distributing companies, after the elimination of duplications resulting from sales among producing companies. Natural gas is sold as a rule by quantity (metered). The total net value of the gas reported as sold at a flat rate in the United States in 1909 was only $419,392; that is, less than 1 per cent of the total value sold.

The difference between the total sales to other producers and to distributing companies, and the total value of gas purchased—$8,176,248—represents the value of gas sold to distributing companies in 1909. The final disposition of the gas sold to such companies is outside the scope of this report, which is based on information received exclusively from producers.

---

[1] The difference of 3 per cent represents the natural gas product of petroleum wells.

Table 31 presents statistics of the natural gas reported as sold by meter. The first two columns show the total quantity sold and its value, including the duplications resulting from purchases and sales among gas producers. In some states natural gas was supplied to producing companies from producers in other states. In order to present a complete statement of the sales in each state, it was therefore necessary to show in detail the sales and purchases of gas among producers; the last two columns of the table show net sales after subtracting all duplications.

Table 31

STATE.	GROSS SALES OF METERED GAS: 1909											
	Total.[1]		Sold direct to consumers.									
			For domestic use.			For manufacturing purposes.			For all other purposes.			
	Quantity. (M cu. ft.)	Value.	Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.		
				Amount.	Average per M cu. ft.		Amount.	Average per M cu. ft.		Amount.	Average per M cu. ft.	
United States	**558,904,426**	**$67,114,713**	**111,824,617**	**$27,297,154**	**$0.24**	**244,373,222**	**$20,323,354**	**$0.08**	**25,241,715**	**$1,636,038**	**$0.06**	
Arkansas	1,921,215	126,400	46,176	11,279	0.24	666,957	37,539	0.06	16,000	1,000	0.06	
California	322,599	167,450	162,489	154,307	0.95	192	192	1.00	67,170	7,567	0.11	
Illinois	5,529,210	556,117	1,104,384	239,147	0.22	1,155,230	82,320	0.07	1,914,762	107,596	0.06	
Indiana	5,266,432	1,464,570	2,962,546	816,897	0.28	749,899	110,158	0.15	116,122	10,454	0.09	
Kansas	69,612,839	6,121,971	7,116,458	1,058,493	0.15	31,656,031	1,544,614	0.05	347,128	14,176	0.04	
Kentucky	2,108,725	476,209	1,248,580	409,974	0.33	845,861	63,880	0.08	14,284	2,355	0.16	
Louisiana	699,091	51,707	221,903	8,402	0.04	243,590	18,455	0.08	45,598	2,069	0.05	
New York	3,113,909	767,992	2,055,858	616,529	0.30	199,840	36,639	0.18	23,130	1,923	0.08	
Ohio	98,077,303	18,270,378	44,138,359	11,960,732	0.27	40,240,445	4,668,423	0.12	1,292,155	155,404	0.12	
Oklahoma	28,055,689	1,371,399	2,136,599	316,615	0.15	10,566,142	277,354	0.03	2,389,494	109,157	0.05	
Pennsylvania	187,209,837	25,208,080	40,427,369	10,024,146	0.25	116,446,489	11,073,798	0.10	5,846,176	591,506	0.10	
Texas	849,396	137,333	146,791	62,946	0.43	235,828	23,583	0.10	95,163	12,527	0.13	
West Virginia	156,038,338	12,371,153	10,003,459	1,602,343	0.16	41,358,974	2,383,368	0.06	13,069,205	619,235	0.05	
All other states [2]	99,843	23,954	53,646	15,344	0.29	7,744	3,031	0.39	5,328	1,067	0.20	

STATE.	GROSS SALES—continued.			METERED GAS PURCHASED.			NET SALES OF METERED GAS.	
	Sold to other gas producers or to distributing companies.							
	Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.
		Amount.	Average per M cu. ft.		Amount.	Average per M cu. ft.		
United States	**177,464,872**	**$17,858,169**	**$0.10**	**127,947,660**	**$9,862,789**	**$0.08**	**430,956,466**	**$57,251,924**
Arkansas	1,192,082	76,582	0.06	....	....	....	1,921,215	126,400
California	92,748	5,384	0.06	28,155	3,316	0.12	294,444	164,134
Illinois	1,354,834	127,054	0.09	470,485	12,713	0.03	5,058,725	543,404
Indiana	1,437,865	527,061	0.37	128,057	22,595	0.18	5,138,375	1,441,975
Kansas	30,493,222	3,504,688	0.11	10,414,936	264,885	0.03	59,197,903	5,857,086
Kentucky	....	....	....	....	....	....	2,108,725	476,209
Louisiana	188,000	22,781	0.12	....	....	....	699,091	51,707
New York	835,081	112,901	0.14	329,635	65,656	0.20	2,784,274	702,336
Ohio	12,406,344	1,485,819	0.12	44,109,550	5,376,075	0.12	53,967,753	12,894,303
Oklahoma	12,963,454	668,273	0.05	5,384,892	127,887	0.02	22,670,797	1,243,512
Pennsylvania	24,489,803	3,518,630	0.14	45,101,627	3,061,087	0.07	142,108,210	22,146,993
Texas	371,614	38,277	0.10	361,129	35,313	0.10	488,267	102,020
West Virginia	91,606,700	7,766,207	0.08	21,619,494	893,262	0.04	134,418,844	11,477,891
All other states [2]	33,125	4,512	0.14	....	....	....	99,843	23,954

---

[1] Does not include 890,064,000 cubic feet of gas, valued at $17,583, which was obtained as a by-product of oil wells, for which no disposition was reported.

[2] Includes states as follows: Colorado, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

Table 32 shows the distribution of the natural gas which was sold at a flat rate in 1909. The distribution according to character of consumption is given in gross totals, which include the sales of gas purchased from other producers.

Table 32 — VALUE OF NATURAL GAS SOLD AT FLAT RATE: 1909

STATE.	Gross sales.					Total purchased.	Net sales.
	Total.	Sold direct to consumers.			Sold to other gas producers or to distributing companies.		
		For domestic use.	For manufacturing purposes.	For all other purposes.			
United States	[1]$445,480	$140,327	$53,892	$44,305	$206,956	$28,088	$418,302
California	4,444	3,415	....	1,029	....	834	3,610
Illinois	7,502	2,803	....	1,237	3,462	....	7,502
Indiana	14,811	11,411	2,950	450	....	....	14,811
Kansas	95,759	40,180	34,853	5,519	15,207	4,660	91,099
Kentucky	4,036	4,036	....	....	....	....	4,036
Louisiana	148,959	20,341	....	....	128,618	7,200	141,759
New York	8,365	2,573	....	5,737	65	....	8,365
Oklahoma	77,527	10,641	8,851	1,470	56,565	2,700	74,827
Pennsylvania	23,725	10,427	1,975	8,274	3,049	10,292	13,433
West Virginia [2]	58,980	33,128	5,263	20,589	....	402	58,578
All other states [3]	1,372	1,372	....	....	....	....	1,372

[1] Exclusive of $27,621 representing the value of gas obtained as a by-product of oil wells, for which the method of disposition was not reported.

[2] Includes Ohio. Several large companies operated in one state and drew their supply in another, hence no state lines could be drawn.

[3] Includes Missouri and South Dakota.

Number of gas consumers.—Table 33 shows the number of gas consumers, classified according to the character of consumption, whether for domestic, manufacturing, or other purposes.

The number of consumers shown in this table who used gas for different purposes is not entirely comparable, and the total number of consumers, therefore, is not very significant. The consumers of gas for manufacturing purposes of course use a great deal more gas than the domestic consumers, as appears from Table 31. The class "All other" consumers is principally municipalities and other public institutions.

Table 33 — NUMBER OF CONSUMERS OF NATURAL GAS: 1909

STATE.	Total.	Domestic.	Manufacturing.	All other.
United States	834,002	821,416	7,822	4,664
Arkansas	444	420	23	1
California	6,839	6,828	1	10
Illinois	7,935	7,672	12	251
Indiana	34,547	34,290	151	106
Kansas	41,696	41,106	464	126
Kentucky	25,527	25,406	71	50
Louisiana	524	493	27	4
New York	20,610	20,536	71	3
Ohio	407,511	402,565	3,781	1,165
Oklahoma	12,833	12,274	130	429
Pennsylvania	310,601	306,637	2,320	1,644
Texas	2,353	2,318	19	16
West Virginia	61,837	60,134	849	854
All other states [1]	745	737	3	5

[1] Includes Colorado, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

Gasoline.—There were nine operators in Pennsylvania who manufactured gasoline from natural gas at the wells. This method of producing gasoline is new and is still in an experimental state. Six operators reported capital amounting to $19,774, while three operators included this item in their reports for petroleum. Only five wage earners and one salaried employee were included in the returns, as much of the labor was performed by the operators themselves and by the pumpers of the wells, who gave but a small part of their time to the manufacture of gasoline. The total quantity of gasoline reported amounted to 271,000 gallons, with a value of $29,000. Of this value, $12,000 was included in the value of products for the petroleum branch of the industry under the caption "All other products."

CHARACTER OF ORGANIZATION.

General summary.—Table 34 shows the relative importance of the different forms of organization in the natural gas branch of the industry in 1909.

This table shows that the corporate form of organization was by far the most important in the natural gas industry. Almost one-half of all operators in the United States were incorporated companies, and these operators employed 87 per cent of all wage earners and contributed 92.7 per cent of the total value of products.

Table 34 — NATURAL GAS ENTERPRISES: 1909

CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.		Value of products.		Per cent distribution.		
		Total.	Average per operator.	Total.	Average per operator.	Number of operators.	Number of wage earners.	Value of products.
Total	1,207	8,391	7	[1] $53,574,836	$44,387	100.0	100.0	100.0
Individual	318	75	(2)	396,182	1,246	26.3	0.9	0.7
Firm	236	47	(2)	666,380	2,824	19.6	0.6	1.2
Corporation	589	7,301	12	49,647,264	84,291	48.8	87.0	92.7
Other	64	968	15	2,865,110	44,767	5.3	11.5	5.3

[1] Includes a duplication resulting from the purchase of natural gas by operators of gas wells.

(2) Less than 1.

Detailed summary for incorporated and unincorporated operators.—The following table gives more detailed statistics for incorporated and unincorporated operators in the United States, with a further division of each of these classes according to the character of their operations:

Table 35

	NATURAL GAS ENTERPRISES: 1909					
	Incorporated.			Unincorporated.		
	Total.	Engaged in—		Total.	Engaged in—	
		Production only.	Production and drilling of new wells.		Production only.	Production and drilling of new wells.
Number of operators	589	290	299	618	507	111
Number of wells:						
Completed Dec. 31 1909	15,482	2,100	13,382	2,789	1,158	1,631
Drilled in 1909	2,364		2,364	290		290
Dry	566		566	47		47
Abandoned	872	181	691	109	54	55
Persons engaged in industry:						
Proprietors and firm members				[1] 3,061	1,862	1,199
Salaried officers of corporations	407	127	280	11	4	7
Superintendents and managers	494	106	388	49	16	33
Clerks and other subordinate salaried employees	1,165	297	868	112	16	96
Wage earners, Dec. 15, 1909, or nearest representative day	7,301	842	6,459	1,090	40	1,050
Capital	$217,634,344	$26,918,320	$190,716,024	$25,463,035	$1,678,893	$23,784,142
Expenses of operation and development	$30,364,207	$5,980,614	$24,383,593	$1,961,860	$121,688	$1,840,172
Services:						
Salaried officers of corporations	$590,719	$118,754	$471,965	$33,945	$670	$33,275
Superintendents and managers	$652,323	$87,214	$565,109	$42,483	$8,095	$34,388
Clerks and other subordinate salaried employees	$913,148	$276,725	$636,423	$90,860	$3,540	$87,320
Wage earners	$3,407,838	$384,021	$3,023,817	$326,652	$20,215	$306,437
Supplies, fuel, and rent of power	$6,030,010	$232,991	$5,797,019	$457,729	$15,928	$441,801
Miscellaneous:						
Royalties and rent of wells	$4,109,613	$180,154	$3,929,459	$340,708	$30,256	$310,452
Contract work [2]	$3,437,537	$33,858	$3,403,679	$229,387	$12,687	$216,700
Rent of offices and other sundry expenses	$3,588,501	$435,323	$3,153,178	$300,939	$13,453	$287,486
Purchased gas	$7,634,518	$4,231,574	$3,402,944	$139,157	$16,844	$122,313
Per cent distribution:[3]						
Salaried officers of corporations	2.6	6.8	2.3	1.9	0.6	1.9
Superintendents and managers	2.9	5.0	2.7	2.3	7.7	2.0
Clerks and other subordinate salaried employees	4.0	15.8	3.0	5.0	3.4	5.1
Wage earners	15.0	22.0	14.4	17.9	19.3	17.8
Supplies, fuel, and rent of power	26.5	13.3	27.6	25.1	15.2	25.7
Royalties and rent of wells	18.1	10.3	18.7	18.7	28.9	18.1
Contract work [2]	15.1	1.9	16.2	12.6	12.1	12.6
Rent of offices and other sundry expenses	15.8	24.9	15.0	16.5	12.8	16.7
Average per M cubic feet: [3]						
Total	$0.063	$0.031	$0.069	$0.053	$0.018	$0.060
Salaried officers of corporations	$0.002	$0.002	$0.002	$0.001	(4)	$0.001
Superintendents and managers	$0.002	$0.002	$0.002	$0.001	$0.001	$0.001
Clerks and other subordinate salaried employees	$0.003	$0.005	$0.002	$0.003	$0.001	$0.003
Wage earners	$0.009	$0.007	$0.010	$0.010	$0.004	$0.011
Supplies, fuel, and rent of power	$0.017	$0.004	$0.019	$0.013	$0.003	$0.016
Royalties and rent of wells	$0.011	$0.003	$0.013	$0.010	$0.005	$0.011
Contract work [2]	$0.010	$0.001	$0.011	$0.007	$0.002	$0.008
Rent of offices and other sundry expenses	$0.010	$0.008	$0.010	$0.009	$0.003	$0.010
Products.						
Total value	$49,647,264	$9,648,547	$39,998,717	$3,927,672	$438,780	$3,488,892
Natural gas:						
M cubic feet	360,604,718	56,022,438	304,582,280	34,171,069	5,678,566	28,492,503
Value at wells	$48,937,928	$9,569,946	$39,367,982	$3,736,632	$428,234	$3,308,398
Average per M cubic feet	$0.136	$0.171	$0.129	$0.109	$0.075	$0.116

[1] Includes 1,670 members of 53 cooperative associations.
[2] The cost of contract work includes $86,513, representing the compensation of part-time employees.
[3] Calculations based on net expenses (total expenses exclusive of cost of purchased gas).
[4] Less than 1 mill.

This table shows that the average expense per thousand cubic feet is greater in the case of corporations than in the case of unincorporated operators. This is due to the fact that such supervisory services as are performed for corporations by salaried officers or managers are often performed in the case of unincorporated enterprises, in whole or in part, by proprietors and firm members, many of whom make no salary charge for these services, but look to the profits of the enterprise for their compensation. Indeed, a considerable number of such proprietors and firm members were returned as performing manual labor at their wells, although the expenses reported included no wage payments for this labor.

Cooperative associations in Indiana.—As stated in Part I, most of the cooperative associations engaged in the production of natural gas are located in Indiana. Table 36 presents a summary of the important items relating to such associations in this state in 1909.

Table 36	Number or amount.
Number of associations	51
Number of associates	1,666
Number of wells:	
Productive wells owned Dec. 31, 1909	141
New wells drilled in 1909	8
Abandoned wells	9
Salaried employees	12
Wage earners, Dec. 31, 1909	7
Primary horsepower	207
Capital	$153,645
Expenses of operation and development	$19,667
Services	$7,392
Salaries	$3,315
Wages	$3,660
Part-time employees	$417
Supplies and materials	$733
Royalties and rent of wells	$2,543
Taxes	$979
Contract work	$6,705
Rent of offices and other sundry expenses	$1,315
Products:	
Total gross value of gas sold	$33,890
At flat rate	$941
Metered	$32,949
Quantity metered, M cubic feet	154,296
Gas purchased from other gas producers:	
Quantity, M cubic feet	2,696
Value	$944
Net value	$32,946
Number of consumers	1,870

Nearly all of the gas produced by the cooperative associations in Indiana was consumed by the members or the associates themselves; the number of consumers exceeding the number of associates by only 204. Of the total number of consumers, only three used gas for manufacturing purposes, their total consumption being 1,056,000 cubic feet. As a rule, no wage earners were employed by these associations, all the wage earners shown in the preceding table being employed by one concern. Most of the associations had no salaried employees, the operation of gas wells requiring very little work, practically all of which was performed by the associates themselves. The amounts reported for wages and the cost of contract work represent in the main the cost of drilling new wells. There was likewise very little power used, the total amount reported being 207 horsepower. Most of the wells were operated without any power whatsoever.

SCALE OF PRODUCTION.

Classification of operators according to value of products.—Table 37 classifies according to the value of products reported all operators whose principal or only product in 1909 was natural gas.

Table 37

VALUE OF PRODUCTS PER OPERATOR.	NATURAL GAS ENTERPRISES: 1909			
	Number of operators.	Value of products.	Per cent distribution.	
			Number of operators.	Value of products.
Total	**1,207**	**$53,574,936**	**100.0**	**100.0**
Less than $1,000	564	170,623	46.7	0.3
$1,000 but less than $5,000	293	720,538	24.3	1.3
$5,000 but less than $20,000	182	1,918,294	15.1	3.6
$20,000 but less than $100,000	115	4,966,300	9.5	9.3
$100,000 but less than $500,000	34	7,687,433	2.8	14.3
$500,000 but less than $1,000,000	8	5,412,005	0.7	10.1
$1,000,000 and over	11	32,699,743	0.9	61.0

The table shows that more than two-thirds of all operators in the United States reported a product valued at less than $5,000 each, the total value of the output of such operators forming only 1.6 per cent of the aggregate. On the other hand, the 11 operators with an output whose value exceeded $1,000,000 each, contributed more than three-fifths of the total value of products.

Classification of operators according to the number of wage earners employed.—The following table classifies all operators who reported regular wage earners in 1909 according to the number of wage earners employed per enterprise. Of the 1,207 enterprises whose principal product was natural gas, 868 did not report regular wage earners.

Table 38

NUMBER OF WAGE EARNERS PER OPERATOR.	NATURAL GAS ENTERPRISES REPORTING REGULAR WAGE EARNERS: 1909			
	Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.
Total	**339**	**8,391**	**100.0**	**100.0**
1 to 5	239	440	70.5	5.2
6 to 20	61	682	18.0	8.1
21 to 50	14	429	4.1	5.1
51 to 100	9	748	2.7	8.9
101 to 500	11	2,463	3.2	29.4
Over 500	5	3,629	1.5	43.2

Only 339, or one-fourth, of the operators in the natural gas branch of the industry reported regular wage earners, and of these, 16 employed 72.6 per cent of the total number of wage earners reported. Therefore it is clearly to be seen that there was a large degree of concentration among the employers of labor even within the natural gas branch of the industry which excludes some of the largest operators, who could not be classified.

PART IV.—SUPPLEMENTARY STATISTICS FOR PETROLEUM WELLS AND GAS WELLS.

GENERAL SUMMARY.

The tabulations of the Bureau of the Census for the combined petroleum and natural gas industry and for each of its branches, have now been presented. The enterprises were classified into branches of the industry in Parts I, II, and III, according to their principal product. In Part IV the basis of classification adopted is the character of wells. Operators reporting petroleum wells only are classed in one group, those reporting gas wells only in a second, and those reporting both petroleum wells and gas wells in a third.

When new wells are drilled small quantities of natural gas are yielded by petroleum wells and vice versa. The total production of natural gas reported by operators of petroleum wells was equal to 0.2 per cent of the total value of their products, and the total value of petroleum reported by operators of gas wells was less than 0.1 per cent of the total value of their products. In the following table petroleum wells are segregated from gas wells, in so far as the reports of the operators permitted of such a segregation.

Table 39

	Total.	OPERATORS REPORTING—		
		Petroleum wells only.	Gas wells only.	Both petroleum wells and gas wells.
Number of operators	[1] 7,793	6,562	1,129	251
Wells:				
Completed Dec. 31, 1909	166,320	103,949	9,890	52,481
Oil	146,625	103,949		42,676
Gas	19,695		9,890	9,805
Drilled in 1909	15,412	9,119	1,561	4,732
Productive	13,076	7,953	1,142	3,981
Dry	2,336	1,166	419	751
Abandoned in 1909	5,871	2,346	569	2,956
Land controlled, gross acreage	14,072,064	3,060,537	2,716,517	8,295,010
Owned	686,268	407,933	124,746	153,589
Held under lease	13,385,796	2,652,604	2,591,771	8,141,421
Sublet	1.377,226	279,612	168,749	938,865
Persons engaged in industry	[2] 62,172	33,601	7,813	20,504
Proprietors and officials	[2] 19,353	14,709	3,691	885
Proprietors and firm members	16,213	12,947	2,976	290
Number performing manual labor	2,155	2,057	73	25
Salaried officers of corporations, superintendents, and managers	[2] 3,140	1,762	715	595
Clerks and other subordinate salaried employees	[2] 2,988	1,094	797	911
Wage earners, Dec. 15, 1909, or nearest representative day	39,831	17,798	3,325	18,708
Per cent distribution	100.0	44.7	8.3	47.0
Average per operator	5	3	3	75
Capital	[3] $683,268,497	$315,210,495	$120,737,688	$225,797,877
Expenses of operation and development	$135,638,644	$65,048,991	$17,768,122	$52,831,531
Services	[4] $34,333,531	$17,736,508	$3.366,404	$12,824,396
Salaried officers of corporations, superintendents, and managers	[4] $4,848,224	$2,373,391	$830,661	$1,401,808
Clerks and other subordinate salaried employees	[4] $2,393,657	$741,356	$620,390	$868,052
Wage earners	$27,091,650	$14,621.761	$1,915,353	$10,554,536
Supplies, fuel, and rent of power	$41,391.608	$25,187,032	$3,745,147	$12,459,429
Purchased gas	$9,888,877	$918	$5,218,435	$4,669,524
Miscellaneous	[4] $50,024,628	$22,124,533	$5,428,136	$22,878,182
Royalties and rent of wells	$21,282,820	$9,625,396	$1,698,244	$9,959,180
Part-time work	$1,035,646	$845,528	$58,063	$132,055
Contract work	[4] $15,700,864	$7,017,854	$1,969,529	$6,606,222
Rent of offices and other sundry expenses	[4] $12,005,298	$4,635,755	$1,702,300	$6,180,725
Products:				
Total value [5]	[6] $185,416,684	$85,208,213	$26,199,386	$74,009,085
Average per operator	$23,793	$12,985	$23,206	$294,857
Petroleum—				
Barrels (42 gallons)	171,559,394	135,198,396	11,395	36,349,603
Per cent of total quantity	100.0	78.8	(7)	21.2
Value at well	$117,696,529	$84,922,999	$16,405	$32,757,125
Natural gas—				
M cubic feet	[6] 559,800,490	3,605,349	208,957,305	347,237,836
Per cent of total quantity	100.0	0.6	37.3	62.0
Value at well	[6] $67,605,397	$192,765	$26,160,917	$41,251,715
Aggregate horsepower	1,221,969	609,308	55,042	557,619
Average per operator	157	93	49	2,222

[1] Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

[2] The following numbers which could not be distributed by classes are properly credited in the total: Persons engaged in industry, 254; proprietors and officials, 68; salaried officers of corporations, superintendents, and managers, 68; clerks and other subordinate salaried employees, 186.

[3] Includes $21,522,437 which could not be distributed among the different classes.

[4] The amounts included in "Rent of offices and other sundry expenses" for the different classes of wells and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, $242,364; clerks and other subordinate salaried employees, $163,859; and contract work, $107,259.

[5] Includes $114,758 value of minor products.

[6] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

[7] Less than one-tenth of 1 per cent.

It will be noted that the group of 251 operators who furnished combined reports for their petroleum and gas wells included the largest operators in the United States and contributed 62 per cent of the total quantity of natural gas and 21.2 per cent of the total quantity of petroleum produced in the United States. The average number of wage earners per operator was 75, whereas operators reporting one class of wells only, employed on an average 3 wage earners each.

KIND OF LABOR USED.

Petroleum.—A conspicuous feature of the operation of petroleum wells in the United States is the large number of operators who run their wells without regular wage earners, either with part-time employees or with contract work only, or altogether without hired labor. In the following table all enterprises reporting petroleum wells only, are classified according to the kind of labor used, by states:

Table 40

STATE.	OPERATORS OF PETROLEUM WELLS ONLY: 1909				
	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
United States	**6,562**	**3,148**	**2,213**	**317**	**884**
California	329	283	11	30	5
Colorado	22	9	8	3	2
Illinois	295	256	31	4	4
Indiana	186	134	32	3	17
Kansas	118	72	37	3	6
Kentucky	69	33	33	3	
Louisiana	23	18	1	3	1
New York	631	130	413	23	65
Ohio	1,051	483	470	35	63
Oklahoma	631	525	81	13	12
Pennsylvania	2,718	875	983	174	686
Texas	153	120	6	21	6
West Virginia	329	205	105	2	17
Wyoming	5	4	1		
All other states[1]	2	1	1		

[1] Includes operators distributed as follows: Michigan, 1; Missouri, 1.

Enterprises employing regular wage earners predominated in each of the states except Pennsylvania, New York, and Kentucky. More than three-fourths of the enterprises employing no hired labor and more than half those employing contract labor only, were located in Pennsylvania.

Table 41 presents a detailed summary for operators of petroleum wells, classified according to the kind of labor used, by fields.

Although less than one-half of the enterprises employed regular wage earners, these enterprises operated nearly three-fourths of all the completed petroleum wells reported on December 31, 1909, and drilled more than five-sixths of all the productive new wells during the year 1909. They produced 95.1 per cent of the total quantity of petroleum and reported 93.1 per cent of the aggregate expenses.

The number of regular wage earners employed was 17,798, and in addition to that number, there were 2,057 proprietors who performed manual labor. The number of persons who were employed by contractors or who divided their time among several operators can not be ascertained, but an idea of the comparative importance of each class of labor may be formed from the amount expended for the same. The total amount paid to wage earners was $14,621,761; the amount paid to employees working part time, $845,528; and the total amount expended for contract work, $7,017,854, which, however, included also the cost of materials and supplies furnished by contractors, as well as their profits. The latter two items in the aggregate formed 12.1 per cent of all expenses of operation and development in the United States.

ENTERPRISES REPORTING PETROLEUM WELLS ONLY: 1909.

	Table 41 FIELD AND KIND OF LABOR USED.	Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.				
			Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.
				Total.	Dry.		Total.	Number performing manual labor.			
1	**United States**	6,562	103,949	9,119	1,166	2,346	12,947	2,057	1,762	1,094	17,798
2	With regular wage earners	3,148	76,879	7,771	1,011	1,933	5,620	424	1,607	1,017	17,798
3	With part-time employees	2,213	19,724	991	115	315	5,317	559	137	71	....
4	With contract work only	317	2,049	338	36	47	607	239	11	3	....
5	Without hired labor	884	5,297	19	4	51	1,403	835	7	3	....
	FIELDS.										
6	**Appalachian**	4,208	64,589	4,243	555	823	9,683	1,747	405	192	4,547
7	With regular wage earners	1,517	44,390	3,169	428	585	3,694	319	348	168	4,547
8	With part-time employees	1,697	13,780	782	93	168	4,294	463	53	23	....
9	With contract work only	211	1,688	277	30	40	429	206	2	....	....
10	Without hired labor	783	4,731	15	4	30	1,266	759	2	1	....
11	**Lima-Indiana**	776	16,160	414	59	995	1,458	197	132	53	1,005
12	With regular wage earners	343	10,814	319	45	852	556	32	106	42	1,005
13	With part-time employees	339	4,726	81	12	129	738	89	25	11	....
14	With contract work only	29	142	14	2	7	70	19	....	....	....
15	Without hired labor	65	478	....	....	7	94	57	1	....	....
16	**Illinois**	295	4,797	1,220	183	77	799	22	129	70	1,106
17	With regular wage earners	256	4,604	1,185	177	76	679	18	125	66	1,106
18	With part-time employees	31	177	32	6	1	95	1	4	4	....
19	With contract work only	4	5	3	....	....	17	1	....	....	....
20	Without hired labor	4	11	....	....	....	8	2	....	....	....
21	**Mid-Continent**	806	12,856	2,033	159	227	690	36	456	294	2,817
22	With regular wage earners	630	11,737	1,908	153	199	447	20	402	261	2,817
23	With part-time employees	122	962	91	3	14	172	4	49	32	....
24	With contract work only	33	106	30	3	....	48	4	3	1	....
25	Without hired labor	21	51	4	....	14	23	8	2	....	....
26	**Gulf**	119	1,163	456	148	146	195	39	108	76	1,223
27	With regular wage earners	105	1,136	450	147	146	175	31	103	74	1,223
28	With part-time employees	3	9	1	....	....	3	2	2	....	....
29	With contract work only	7	12	5	1	....	13	3	1	....	....
30	Without hired labor	4	6	....	....	....	4	3	2	2	....
31	**California—Coastal and southern**	137	1,541	111	8	39	76	13	148	113	1,710
32	With regular wage earners	95	1,396	110	8	37	35	4	142	110	1,710
33	With part-time employees	11	52	....	....	2	7	....	3	1	....
34	With contract work only	26	75	1	....	....	28	5	3	2	....
35	Without hired labor	5	18	....	....	....	6	4	....	....	....
36	**California—San Joaquin Valley**	192	2,728	596	25	30	29	....	377	296	5,248
37	With regular wage earners	188	2,710	588	25	30	29	....	375	296	5,248
38	With contract work only	4	18	8	....	....	....	....	2	....	....
39	**Other**	29	115	46	29	9	17	3	7	....	142
40	With regular wage earners	14	92	42	28	8	5	....	6	....	142
41	With part-time employees	10	18	4	1	1	8	....	1	....	....
42	With contract work only	3	3	....	....	....	2	1	....	....	....
43	Without hired labor	2	2	....	....	....	2	2	....	....	....

	Table 41—Continued.		EXPENSES OF OPERATION AND DEVELOPMENT.												
				Services.				Miscellaneous.				Per cent distribution.			
	FIELD AND KIND OF LABOR USED.	Capital.	Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Supplies, fuel, and rent of power.	Part-time work.	Contract work.	Royalties and rent of wells.	Rent of offices and other sundry expenses.	Salaries.	Wages.	Supplies, fuel, and rent of power.	Part-time work.
1	**United States**	**$315,210,495**	**$65,048,991**	**$2,373,391**	**$741,356**	**$14,621,761**	**[1]$25,187,850**	**$845,528**	**$7,017,854**	**$9,625,396**	**$4,635,755**	**4.8**	**22.5**	**38.7**	**1.3**
2	With regular wage earners	284,577,969	60,553,416	2,280,928	723,991	14,621,761	[1] 23,714,782		5,958,966	8,889,315	4,363,673	5.0	24.1	39.2	
3	With part-time employees	22,926,877	3,560,958	80,781	15,989		1,102,715	845,528	737,968	566,131	211,846	2.7		31.0	23.7
4	With contract work only	2,613,828	691,069	7,712	840		269,012		320,920	70,530	22,055	1.2		38.9	
5	Without hired labor	5,091,821	243,548	3,970	536		101,441			99,420	38,181	1.9		41.7	
	FIELDS.														
6	**Appalachian**	**82,383,316**	**16,712,478**	**374,863**	**85,033**	**3,003,983**	**[1] 5,211,258**	**576,784**	**3,147,806**	**2,479,163**	**833,588**	**2.9**	**19.1**	**33.2**	**3.7**
7	With regular wage earners	60,838,201	12,677,059	338,257	81,648	3,003,983	[1] 4,157,430		2,389,745	2,028,418	677,578	3.3	23.7	32.8	
8	With part-time employees	15,869,527	2,420,152	33,771	3,289		815,935	576,784	544,620	331,318	114,435	1.5		33.7	23.8
9	With contract work only	1,649,033	407,239	1,800			146,736		213,441	32,782	12,480	0.4		36.0	
10	Without hired labor	4,026,555	208,028	1,035	96		91,157			86,645	29,095	0.5		43.8	
11	**Lima-Indiana**	**14,494,279**	**2,380,444**	**94,979**	**22,524**	**674,627**	**472,715**	**155,215**	**301,090**	**482,475**	**176,819**	**4.9**	**28.3**	**19.9**	**6.5**
12	With regular wage earners	10,547,800	1,920,577	84,692	21,458	674,627	406,895		225,500	367,992	139,413	5.5	35.1	21.2	
13	With part-time employees	3,444,335	412,310	10,272	1,066		53,253	155,215	57,076	103,203	32,225	2.8		12.9	37.6
14	With contract work only	146,355	32,425				8,117		18,514	4,473	1,321			25.0	
15	Without hired labor	355,789	15,132	15			4,450			6,807	3,860	0.1		29.4	
16	**Illinois**	**13,641,401**	**6,784,055**	**201,097**	**45,619**	**890,276**	**2,042,410**	**16,532**	**1,523,183**	**1,439,221**	**625,717**	**3.6**	**13.1**	**30.1**	**0.2**
17	With regular wage earners	13,342,411	6,591,328	197,977	44,299	890,276	1,986,662		1,485,334	1,379,636	607,144	3.7	13.5	30.1	
18	With part-time employees	286,790	187,529	3,120	1,320		54,846	16,532	33,975	59,232	18,504	2.4		29.2	8.8
19	With contract work only	2,800	5,069				846		3,874	293	56			16.7	
20	Without hired labor	9,400	129				56			60	13			43.4	
21	**Mid-Continent**	**49,262,407**	**11,219,107**	**565,033**	**166,826**	**2,075,453**	**3,414,977**	**73,056**	**1,723,584**	**2,220,254**	**979,924**	**6.5**	**18.5**	**30.4**	**0.7**
22	With regular wage earners	46,125,775	10,678,168	529,119	156,452	2,075,453	3,241,687		1,601,456	2,138,573	935,428	6.4	19.4	30.4	
23	With part-time employees	2,673,045	427,287	29,634	10,074		117,996	73,056	96,261	63,345	36,921	9.3		27.6	17.1
24	With contract work only	298,160	97,448	4,560	300		51,004		25,867	13,188	2,529	5.0		52.3	
25	Without hired labor	165,427	16,204	1,720			4,290			5,148	5,046	10.6		26.5	
26	**Gulf**	**10,455,651**	**3,568,260**	**188,966**	**75,148**	**1,177,283**	**1,293,021**	**3,037**	**56,208**	**535,650**	**238,947**	**7.4**	**33.0**	**36.2**	**0.1**
27	With regular wage earners	9,823,521	3,463,095	185,691	74,468	1,177,283	1,230,255		37,905	526,117	231,376	7.5	34.0	35.5	
28	With part-time employees	83,930	58,692	1,375			42,525	3,037		6,110	5,645	2.3		72.5	5.2
29	With contract work only	42,500	43,588	700	240		19,606		18,303	2,870	1,869	2.2		45.0	
30	Without hired labor	505,700	2,885	1,200	440		635			553	57	56.8		22.0	
31	**California—Coastal and southern**	**32,478,501**	**5,703,853**	**284,174**	**79,081**	**1,563,005**	**[1] 2,857,367**	**4,916**	**63,411**	**522,013**	**349,686**	**6.0**	**37.4**	**50.1**	**0.1**
32	With regular wage earners	32,121,421	5,651,387	261,677	78,541	1,563,005	[1] 2,845,234		42,062	516,137	344,731	6.0	27.7	50.3	
33	With part-time employees	187,250	26,364	2,085	240		8,689	4,916	6,036	2,597	1,801	8.8		33.0	18.6
34	With contract work only	163,180	24,839	412	300		2,660		15,313	3,072	3,082	2.9		10.7	
35	Without hired labor	6,650	1,063				784			207	72			73.8	
36	**California—San Joaquin Valley**	**110,607,640**	**19,299,688**	**670,555**	**287,125**	**5,110,912**	**9,721,606**		**201,858**	**1,938,583**	**1,389,049**	**4.9**	**26.5**	**50.4**	
37	With regular wage earners	110,325,840	19,220,101	670,315	267,125	5,110,912	9,681,588		176,964	1,924,806	1,388,391	4.9	26.6	50.4	
38	With contract work only	281,800	79,587	240			40,018		24,894	13,777	658	0.3		50.3	
39	**Other**	**1,887,300**	**381,306**	**13,724**		**126,222**	**174,596**	**15,988**	**714**	**8,037**	**42,025**	**3.6**	**33.1**	**45.8**	**4.2**
40	With regular wage earners	1,453,000	351,701	13,200		126,222	165,031			7,636	39,612	3.8	35.9	46.9	
41	With part-time employees	382,000	28,624	524			9,471	15,988		326	2,315	1.8		33.1	55.9
42	With contract work only	30,000	874				25		714	75	60			2.9	
43	Without hired labor	22,300	107				69				38			64.5	

---

[1] The total includes $918, cost of purchased gas, distributed as follows: Appalachian field, $84; Coastal and southern California field, $834.

PETROLEUM WELLS ONLY: 1909—Continued.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.						HORSEPOWER.	
	Per cent distribution—continued.			Average expense per barrel of petroleum.							Value.			Petroleum.				
															Value at well.			
	Contract work.	Royalties and rent of wells.	Rent of offices and other sundry expenses.	Salaries.	Wages.	Supplies, fuel, and rent of power.	Part-time work.	Contract work.	Royalties and rent of wells.	Rent of offices and other sundry expenses.	Total.	Average per operator.	Per cent distribution.	Barrels (42 gals.).	Total.	Average per barrel.	Aggregate.	Average per operator.
1	10.8	14.8	7.1	$0.023	$0.108	$0.188	$0.006	$0.052	$0.071	$0.034	$85,208,213	$12,985	100.0	135,198,396	$84,922,999	$0.628	609,308	93
2	9.8	14.7	7.2	0.023	0.114	0.184	....	0.046	0.069	0.034	78,359,456	24,892	92.0	128,637,025	78,128,478	0.607	466,801	148
3	20.7	15.9	5.9	0.020	....	0.223	0.171	0.149	0.114	0.043	5,036,266	2,276	5.9	4,954,206	4,995,626	1.008	95,209	43
4	46.4	10.2	3.2	0.010	....	0.318	....	0.379	0.083	0.026	730,863	2,306	0.9	846,620	720,509	0.851	12,404	39
5	....	40.8	15.7	0.006	....	0.133	....	....	0.131	0.050	1,081,628	1,224	1.3	760,545	1,078,386	1.418	34,894	39
6	20.0	15.8	5.3	0.032	0.207	0.360	0.040	0.217	0.171	0.058	22,891,754	6,440	100.0	14,484,507	22,751,365	1.571	393,709	94
7	18.8	16.0	5.3	0.036	0.260	0.359	....	0.207	0.175	0.059	18,202,601	11,999	79.5	11,568,749	18,099,107	1.564	268,978	177
8	22.5	13.7	4.7	0.018	....	0.392	0.277	0.262	0.159	0.055	3,320,000	1,956	14.5	2,079,327	3,287,858	1.581	80,544	47
9	52.4	8.0	3.1	0.007	....	0.604	....	0.879	0.135	0.051	397,679	1,885	1.7	242,839	395,338	1.628	11,310	54
10	....	41.7	14.0	0.002	....	0.154	....	....	0.146	0.049	971,474	1,241	4.2	593,592	969,062	1.633	32,877	42
11	12.6	20.3	7.4	0.032	0.182	0.127	0.042	0.081	0.130	0.048	3,265,260	4,208	100.0	3,713,917	3,253,564	0.876	39,991	52
12	11.7	19.2	7.3	0.038	0.241	0.145	....	0.080	0.131	0.050	2,460,506	7,173	75.4	2,801,498	2,450,930	0.875	27,648	81
13	13.8	25.0	7.8	0.014	....	0.066	0.193	0.071	0.129	0.040	708,848	2,091	21.7	802,962	707,948	0.882	10,465	31
14	57.1	13.8	4.1	....	....	0.233	....	0.531	0.128	0.038	30,777	1,061	0.9	34,896	30,027	0.860	430	15
15	....	45.0	25.5	(2)	....	0.060	....	....	0.091	0.052	65,129	1,002	2.0	74,561	64,659	0.867	1,448	22
16	22.5	21.2	9.2	0.017	0.063	0.144	0.001	0.108	0.102	0.044	8,896,540	30,168	100.0	14,154,107	8,885,900	0.628	17,500	69
17	22.5	20.9	9.2	0.018	0.066	0.147	....	0.110	0.102	0.045	8,481,889	33,132	95.3	13,526,147	8,472,165	0.626	16,771	66
18	18.1	31.6	9.9	0.007	....	0.088	0.027	0.055	0.095	0.030	411,143	13,263	4.6	622,515	410,227	0.659	673	22
19	76.4	5.8	1.1	....	....	0.200	....	0.914	0.069	0.013	2,650	662	(3)	4,238	2,650	0.625	8	2
20	....	46.5	10.1	....	....	0.046	....	....	0.050	0.011	858	214	(3)	1,207	858	0.711	48	12
21	15.4	19.8	8.7	0.017	0.048	0.079	0.002	0.040	0.051	0.023	15,592,168	18,345	100.0	43,473,528	15,568,539	0.358	58,776	73
22	15.0	20.0	8.8	0.016	0.050	0.078	....	0.038	0.051	0.022	14,948,237	23,727	95.9	41,781,935	14,931,110	0.357	55,385	88
23	22.5	14.8	8.6	0.030	....	0.089	0.055	0.073	0.048	0.028	502,373	4,118	3.2	1,324,530	495,871	0.374	2,851	23
24	26.5	13.5	2.6	0.016	....	0.170	....	0.086	0.044	0.008	113,375	3,436	0.7	299,442	113,375	0.379	89	3
25	....	31.8	31.1	0.025	....	0.063	....	....	0.076	0.075	28,183	1,342	0.2	67,621	28,183	0.417	451	21
26	1.6	15.0	6.7	0.036	0.162	0.177	(2)	0.008	0.074	0.033	5,252,398	44,138	100.0	7,286,502	5,242,445	0.718	20,254	170
27	1.1	15.2	6.7	0.036	0.164	0.172	....	0.005	0.073	0.032	5,163,409	49,175	98.3	7,159,327	5,153,456	0.720	20,009	191
28	....	10.4	9.6	0.024	....	0.735	0.053	....	0.106	0.098	41,244	13,748	0.8	57,826	41,244	0.713	135	45
29	42.0	6.6	4.3	0.018	....	0.383	....	0.358	0.056	0.037	36,268	5,181	0.7	51,193	36,268	0.708	87	12
30	....	19.2	2.0	0.090	....	0.035	....	....	0.030	0.003	11,477	2,869	0.2	18,156	11,477	0.632	23	6
31	1.1	9.2	6.1	0.031	0.143	0.261	(2)	0.006	0.048	0.032	6,839,639	49,924	100.0	10,943,420	6,820,760	0.623	18,281	133
32	0.7	9.1	6.1	0.031	0.145	0.263	....	0.004	0.048	0.032	6,744,603	70,996	98.6	10,806,984	6,726,520	0.622	17,985	189
33	22.9	9.9	6.8	0.042	....	0.157	0.089	0.109	0.047	0.033	38,699	3,518	0.6	55,351	38,519	0.696	139	13
34	61.6	12.4	12.4	0.009	....	0.035	....	0.200	0.040	0.040	52,932	2,036	0.8	76,395	52,676	0.690	150	6
35	....	19.5	6.8	....	....	0.167	....	....	0.044	0.015	3,405	681	(3)	4,690	3,045	0.649	7	1
36	1.0	10.0	7.2	0.023	0.126	0.238	....	0.005	0.047	0.034	22,143,227	115,329	100.0	40,826,778	22,077,756	0.541	58,028	302
37	0.9	10.0	7.2	0.023	0.126	0.238	....	0.004	0.047	0.034	22,051,906	117,297	99.6	40,693,064	21,993,435	0.540	57,748	307
38	31.3	17.3	0.8	0.002	....	0.299	....	0.186	0.103	0.005	91,321	22,830	0.4	133,714	84,321	0.631	280	70
39	0.2	2.1	11.0	0.043	0.400	0.553	0.051	0.002	0.026	0.133	327,227	11,284	100.0	315,637	322,670	1.022	2,769	95
40	....	2.2	11.3	0.044	0.422	0.551	....	....	0.026	0.132	306,305	21,879	93.6	299,321	301,755	1.008	2,277	163
41	....	1.1	8.1	0.045	....	0.810	1.367	....	0.028	0.198	13,959	1,396	4.3	11,695	13,959	1.194	402	40
42	81.7	8.6	6.9	....	....	0.006	....	0.183	0.019	0.015	5,861	1,954	1.8	3,903	5,854	1.500	50	17
43	....	....	35.5	....	....	0.096	....	....	....	0.053	1,102	551	0.3	718	1,102	1.535	40	20

---

[2] Less than 1 mill.

[3] Less than one-tenth of 1 per cent.

Natural gas.—In the following table all enterprises reporting natural gas wells only are classified according to the kind of labor used in 1909, by states:

Table 42

STATE.	OPERATORS OF NATURAL GAS WELLS ONLY: 1909				
	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
United States	**1,129**	**286**	**202**	**128**	**513**
Arkansas	3	1	2	....	....
California	11	2	2	1	6
Illinois	7	4	....	2	1
Indiana	454	48	45	43	318
Kansas	82	31	26	12	13
Kentucky	15	5	3	3	4
Louisiana	6	2	1	1	2
Missouri	9	....	4	3	2
New York	74	22	12	11	29
Ohio	109	40	18	10	41
Oklahoma	40	22	8	3	7
Pennsylvania	243	74	63	30	76
South Dakota	3	....	....	....	3
West Virginia	66	31	17	9	9
All other states[1]	7	4	1	....	2

[1] Includes enterprises distributed as follows: Colorado, 1; North Dakota, 1; Tennessee, 1; Texas, 2; and Wyoming, 2.

Only one-fourth (25.3 per cent) of the enterprises reporting natural gas wells only employed regular wage earners, and almost half (45.4 per cent) employed no hired labor whatever. In Indiana, where the production of gas is rapidly declining, the largest number of enterprises was reported as employing no hired labor. Table 43 presents a detailed summary for enterprises reporting natural gas wells, classified according to the character of labor employed.

Enterprises employing regular wage earners reported 72.2 per cent of wells, and 90.3 per cent of the total value of products; those employing no hired labor, on the other hand, reported only 11.8 per cent of the wells and 3.5 per cent of the value of products.

Table 43

	ENTERPRISES REPORTING NATURAL GAS WELLS ONLY: 1909				
	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
Number of operators	1,129	286	202	128	513
Wells:					
Completed Dec. 31, 1909	9,890	7,145	991	587	1,167
Drilled in 1909—					
Productive	1,142	887	114	134	7
Dry	419	320	20	78	1
Abandoned in 1909	569	406	61	42	60
Persons engaged in industry:					
Proprietors and firm members	2,976	804	584	316	1,272
Salaried officers of corporations, superintendents, and managers	715	448	100	81	86
Clerks and other subordinate salaried employees	797	707	38	14	38
Wage earners, Dec. 15, or nearest representative day	3,325	3,325	....	....	....
Capital	$120,737,688	$110,843,203	$4,705,251	$2,283,671	$2,905,563
Expenses of operation and development	$17,758,122	$16,090,115	$775,165	$468,473	$424,369
Services—					
Salaried officers of corporations, superintendents, and managers	$830,661	$704,993	$58,914	$32,298	$34,456
Clerks and other subordinate salaried employees	$620,390	$590,422	$13,635	$5,620	$10,713
Wage earners	$1,915,353	$1,915,353	....	....	....
Supplies, fuel, and rent of power	$3,745,147	$3,430,983	$190,177	$98,775	$25,212
Purchased gas	$5,218,435	$4,890,277	$48,520	$3,907	$275,731
Miscellaneous—					
Royalties and rent of wells	$1,698,244	$1,455,050	$137,694	$64,214	$41,286
Part-time work	$58,063	....	$58,063	....	....
Contract work	$1,969,529	$1,509,779	$220,588	$239,162	....
Rent of offices and other sundry expenses	$1,702,300	$1,593,258	$47,574	$24,497	$36,971
Products:					
Total value[1]	$26,199,386	$23,671,094	$1,157,797	$448,438	$922,057
Natural gas—					
M cubic feet[1]	208,957,305	171,276,329	22,617,516	6,276,334	8,787,126
Value at wells[1]	$26,160,917	$23,637,842	$1,154,298	$446,741	$922,036
Aggregate horsepower	55,042	53,614	891	355	182

[1] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

ROYALTIES.

The total amount of royalties reported by operators of producing enterprises in the petroleum and natural gas industry was $21,282,820. In many cases, however, royalties were reported by operators who owned some land and leased some, and in such cases no comparisons can be made between the amount of royalties and the value of the products; in other cases royalties were reported by operators who leased land which produced both oil and gas, and as a consequence the royalties could not be classified according to the character of the product.

Petroleum.—In Table 44 the royalties reported by the operators of petroleum wells on leased land only, and the value of the products of such wells are shown by fields, together with the percentage which royalties constituted of the value of products of such enterprises.

Table 44

FIELD.	PETROLEUM WELLS OPERATED ON LEASED LAND ONLY: 1909		
	Value of products.	Royalties.	
		Amount.	Per cent ratio to value of products.
United States	$41,048,828	$8,447,988	15.7
Appalachian	15,401,328	2,005,145	13.0
Lima-Indiana	2,567,923	408,580	15.9
Illinois	7,125,465	1,184,364	16.6
Mid-Continent	9,804,154	1,425,288	14.5
Gulf	1,406,989	256,886	18.3
California:			
Coastal and southern	1,019,732	170,441	16.7
San Joaquin Valley	3,712,061	995,957	26.8
Other	10,974	1,307	11.9

The total value of products of operators reporting petroleum wells only, as shown in Table 39, was $85,208,213, and the royalties paid by these operators amounted to $9,625,396. The value of products reported by such operators operating on leased land only, amounted to $41,048,626, and the royalties paid by these operators amounted to $6,447,968. These royalties constituted more than two-thirds of the total royalties paid, and the proportion that they constituted of the value of products can be accepted as the normal ratio for all leased land.

Natural gas.—Table 45 shows the royalties reported by operators of natural gas wells who operated on leased land only, and the value of the products of such wells by states, together with the percentage which royalties constituted of the value of products of such enterprises.

Table 45

STATE.	GAS WELLS OPERATED ON LEASED LAND ONLY: 1909		
	Value of products.	Royalties.	
		Amount.	Per cent ratio to value of products.
United States	$8,767,321	$1,198,883	13.7
Illinois	275,264	19,760	7.2
Indiana	528,597	51,005	9.6
Kansas	1,153,026	151,227	13.1
Kentucky	233,996	13,203	5.6
New York	458,396	32,890	7.2
Ohio	1,933,654	268,493	13.9
Oklahoma	563,551	29,010	5.1
Pennsylvania	2,094,865	240,859	11.5
West Virginia	1,423,531	376,467	26.4
All other states [1]	102,441	13,969	13.6

[1] Includes Arkansas, California, Colorado, Louisiana, and Missouri.

The value of products of gas enterprises operated upon leased land only, constituted about one-third of the value of products returned by all operators reporting gas wells only, yet the royalties were more than two-thirds of the total. West Virginia showed the largest percentage of value of products paid as royalties, while Oklahoma showed the smallest.

DEPTH OF WELLS.

Tables 46 and 47 present statistics for depth of wells. In Table 46, for petroleum wells, the classification is by fields. In Table 47, for natural gas wells, the classification is by states.

Table 46

FIELD.	DEPTH OF PETROLEUM WELLS (FEET).	
	Shallowest.	Deepest.
United States	25	5,734
Appalachian	25	5,734
Lima-Indiana	125	2,853
Illinois	96	2,003
Mid-Continent	50	2,400
Gulf	200	2,850
California:		
Coastal and southern	125	4,310
San Joaquin Valley	200	5,576
Other	120	3,725

Table 47

STATE.	DEPTH OF GAS WELLS (FEET).	
	Shallowest.	Deepest.
United States	80	3,600
Arkansas	1,125	3,175
California	80	3,000
Colorado	2,000	2,000
Illinois	207	1,015
Indiana	400	1,300
Kansas	160	2,200
Kentucky	216	2,800
Louisiana	80	1,140
Missouri	250	750
New York	300	3,000
North Dakota	178	190
Ohio	150	3,448
Oklahoma	450	2,500
Pennsylvania	237	3,600
South Dakota	1,300	1,430
Texas	1,065	1,726
West Virginia	700	3,096
Wyoming	572	1,100

PART V.—GENERAL STATISTICS: 1909.

The principal statistics obtained by the census of petroleum and natural gas wells in 1909 are given in greater detail in Tables 48, 49, 50, 51, and 52.

Table 48 presents a more complete summary than did Table 4 for the producing enterprises of the industry, classified according to the principal product, and contains a column showing the detailed figures for unclassified enterprises.

Tables 49, 50, and 51 classify the enterprises by production only, and production combined with the drilling of new wells. These tables do not include the statistics of any wells operated by the state penal institutions, by municipalities or by eleemosynary institutions, nor wells for which the operators failed to furnish full reports as to capital, expenses, employees, etc. The value of products of enterprises thus omitted amounted to $2,300,000, of which $1,500,000 was the value of petroleum and $800,000 the value of natural gas. These totals represent only 1.3 per cent and 1.4 per cent of the total value of petroleum products and of the net value of natural gas products, respectively.

Table 49 presents data covering the operations of all producing enterprises, by fields and states.

Table 50 gives data for enterprises of which the principal product was petroleum, by fields and states.

Table 51 covers the enterprises the principal product of which was natural gas, by states. In Tables 50 and 51 the operators have been classified, therefore, according to their prevailing product. There were a few operators, however, in Pennsylvania and West Virginia whose reports combined a number of distinct enterprises of each class, making it impossible to segregate the operations of the several enterprises according to the character of each. These enterprises are covered in Table 48 and are given in the combined total in Table 49.

Table 52 gives data, by states, for the nonproducing enterprises.

SUMMARY FOR OPERATORS, CLASSIFIED ACCORDING TO PRINCIPAL PRODUCT: 1909.

Table 48

	Total.	PRINCIPAL PRODUCT.		
		Petroleum.	Natural gas.	Unclassified.
Number of operators	[1] 7,793	6,683	1,207	52
Wells:				
Completed Dec. 31, 1909	166,320	129,422	18,271	18,627
Oil	146,625	128,771	2,434	15,420
Gas	19,695	651	15,837	3,207
Drilled in 1909	15,412	11,451	2,654	1,307
Productive	13,076	9,861	2,041	1,174
Dry	2,336	1,590	613	133
Abandoned in 1909	5,871	4,147	981	743
Land controlled, acres:				
Net	12,694,838	4,049,790	4,567,190	4,077,858
Owned	686,268	455,288	148,873	82,107
Held under lease	12,008,570	3,594,502	4,418,317	3,995,751
Sublet	1,377,226	939,794	161,804	275,628
Gross	14,072,064	4,989,584	4,728,994	4,353,486
Persons engaged in industry	[2] 62,172	40,245	13,690	7,983
Proprietors and officials	[2] 19,353	14,990	4,022	273
Proprietors and firm members	16,213	13,064	3,061	88
Number performing manual labor	2,155	2,068	82	5
Salaried officers of corporations	[2] 1,153	641	418	66
Superintendents and managers	[2] 1,987	1,285	543	119
Clerks and other subordinate salaried employees	[2] 2,988	1,222	1,277	303
Wage earners, Dec. 15, 1909, or nearest representative day	39,831	24,033	8,391	7,407
Men 16 years of age and over—				
Engineers, firemen, mechanics, etc	27,063	19,153	2,202	5,708
All other employees	[3] 12,768	[3] 4,880	[3] 6,189	1,699
Number of wage earners employed on the 15th day of each month:				
January	34,162	21,765	5,660	6,737
February	33,521	21,779	5,143	6,599
March	33,920	21,939	5,128	6,853
April	34,868	22,383	5,507	6,978
May	35,854	22,607	6,111	7,136
June	36,728	22,541	6,648	7,539
July	37,368	23,000	7,040	7,328
August	37,849	22,789	7,562	7,498
September	38,098	22,911	7,519	7,668
October	39,121	23,313	8,202	7,606
November	39,932	23,187	8,727	8,018
December	39,502	23,742	8,357	7,403

[1] Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the several classes.

[2] The following numbers which could not be distributed by classes are properly distributed in the total: Persons engaged in industry, 254; proprietors and officials, 68; salaried officers of corporations, 28; superintendents and managers, 40; clerks and other subordinate salaried employees, 186.

[3] The total includes 11 boys under 16 years of age distributed as follows: Petrolum, 8; natural gas, 3.

SUMMARY FOR OPERATORS, CLASSIFIED ACCORDING TO PRINCIPAL PRODUCT: 1909—Continued.

Table 48—Continued.

	Total.	PRINCIPAL PRODUCT.		
		Petroleum.	Natural gas.	Unclassified.
Capital	[1] $683,268,497	$360,422,056	$243,097,379	$58,226,625
Expenses of operation and development	$135,638,644	$79,748,844	$32,326,067	$23,563,733
Services	[2] $34,333,531	$22,597,940	$6,057,968	$5,271,400
Salaried officers, superintendents, and managers	[2] $4,848,224	$2,775,808	$1,319,470	$510,582
Clerks and other subordinate salaried employees	[2] $2,393,657	$984,392	$1,004,008	$241,398
Wage earners	$27,091,650	$18,837,740	$3,734,490	$4,519,420
Supplies, fuel, and rent of power	$51,280,485	$29,114,627	$14,261,414	$7,904,444
Supplies	$39,947,013	$28,452,233	$6,334,762	$5,160,018
Fuel and rent of power	$1,444,595	$658,448	$152,977	$633,170
Cost of purchased gas	$9,888,877	$3,946	$7,773,675	$2,111,256
Miscellaneous	[2] $50,024,628	$28,036,277	$12,006,685	$10,387,889
Royalties and rent of wells	$21,282,820	$12,509,181	$4,450,321	$4,323,318
Taxes	[2] $2,576,986	$1,004,164	$1,062,643	$477,827
Contract work	[3] $16,736,510	[3] $9,380,820	[3] $3,666,924	[3] $3,581,507
Rent of offices and other sundry expenses	[2] $9,428,312	$5,142,112	$2,826,797	$2,005,237
Per cent of total:				
Services	25.3	28.3	18.8	22.4
Supplies	37.8	36.5	44.1	33.5
Contract work	12.3	11.8	11.3	15.2
Other miscellaneous	24.5	23.4	25.8	28.9
Products:				
Total value [4]	[5] $185,416,684	$104,550,845	$53,574,936	$27,290,903
Average per operator	$23,793	$15,644	$44,387	$524,825
Petroleum—				
Barrels (42 gallons)	171,559,394	162,581,408	791,529	8,186,457
Per cent of total quantity	100.0	94.8	0.5	4.8
Value at well	$117,696,529	$103,600,756	$878,312	$13,217,461
Natural gas—				
M cubic feet	[5] 559,800,490	16,577,637	394,775,787	148,447,066
Per cent of total quantity	100.0	3.0	70.5	26.5
Value at well	[5] $67,605,397	$857,640	$52,674,560	$14,073,197
Primary power, aggregate horsepower	1,221,969	730,664	151,363	339,942
Average per operator	157	109	125	6,537
Owned, total horsepower	1,221,809	730,634	151,233	339,942
Steam engines—				
Number	36,928	25,554	606	10,768
Horsepower	746,658	435,120	61,321	250,217
Gas or gasoline engines—				
Number	21,762	16,106	1,498	4,158
Horsepower	475,151	295,514	89,912	89,725
Electric horsepower rented from other enterprises	160	30	130	....
Electric motors run by current generated by the enterprise using:				
Number	454	7	38	409
Horsepower	8,589	112	687	7,790

---

[1] Includes $21,522,437 which could not be distributed among the different classes.

[2] The amounts included in "Rent of offices and other sundry expenses" for the different classes and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, $242,364; clerks and other subordinate salaried employees, $163,859; taxes, $32,352; and contract work, $107,259.

[3] The total includes $1,035,646 paid to part-time employees, distributed as follows: Petroleum, $856,935; natural gas, $86,513; unclassified, $92,198. See also note 2.

[4] Includes $114,758, value of minor products.

[5] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

PETROLEUM AND NATURAL GAS—DETAILED STATISTICS OF PRODUCING ENTERPRISES, BY CHARACTER OF OPERATIONS, BY FIELDS AND STATES: 1909.

Table 49

	FIELD, STATE, AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.									
			Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.		
								Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Total.	Men 16 years of age and over.	
				Total.	Dry.				Total.	Performing manual labor.					Engineers, firemen, mechanics, etc.	All other employees.
1	**United States**	[1]7,793	166,320	15,412	2,336	5,871	[2]62,172	[2]19,353	16,213	2,155	[2]1,153	[2]1,987	[2]2,988	39,831	27,063	[3]12,768
2	**Production only**	5,206	56,265	1	1	1,401	16,528	11,541	10,743	1,562	318	480	592	4,395	3,261	1,134
3	**Production and drilling of new wells**	2,736	110,055	15,411	2,335	4,470	45,390	7,744	5,470	593	807	1,467	2,210	35,436	23,802	11,634
	FIELDS.															
4	Appalachian [4]	4,829	109,685	7,740	1,128	2,573	33,811	11,964	10,752	1,816	422	790	1,510	20,337	12,884	[3]7,463
5	Production only	3,290	35,552	......	......	329	10,273	7,544	7,286	1,318	86	172	346	2,383	1,522	861
6	Production and drilling of new wells	1,539	74,133	7,740	1,128	2,244	23,538	4,420	3,466	498	336	618	1,164	17,954	11,362	6,592
7	Lima-Indiana	1,275	23,132	744	141	2,258	5,981	3,875	3,532	216	181	162	131	1,975	1,619	356
8	Production only	1,082	13,081	......	......	854	3,402	2,643	2,455	178	98	90	69	690	594	96
9	Production and drilling of new wells	193	10,051	744	141	1,404	2,579	1,232	1,077	38	83	72	62	1,285	1,025	260
10	Illinois	323	10,918	2,537	384	205	5,188	1,004	817	22	51	136	125	4,059	3,281	778
11	Production only	130	1,219	......	......	11	543	360	331	10	15	14	20	163	153	10
12	Production and drilling of new wells	193	9,699	2,537	384	194	4,645	644	486	12	36	122	105	3,896	3,128	768
13	Mid-Continent	994	16,689	3,047	430	581	6,655	1,421	769	44	228	424	504	4,730	3,030	1,700
14	Production only	512	5,269	1	1	184	1,465	676	462	25	78	136	114	675	575	100
15	Production and drilling of new wells	482	11,420	3,046	429	397	5,190	745	307	19	150	288	390	4,055	2,455	1,600
16	Gulf	128	1,351	544	170	173	1,981	318	198	39	43	77	97	1,566	1,091	[3]475
17	Production only	34	97	......	......	2	258	120	101	16	8	11	10	128	95	33
18	Production and drilling of new wells	94	1,254	544	170	171	1,723	198	97	23	35	66	87	1,438	996	442
19	California-Coastal and southern	144	1,568	111	8	41	2,086	234	83	13	56	95	114	1,738	1,271	467
20	Production only	85	654	......	......	16	217	104	79	12	7	18	14	99	89	10
21	Production and drilling of new wells	59	914	111	8	25	1,869	130	4	1	49	77	100	1,639	1,182	457
22	California—San Joaquin Valley [5]	198	2,748	597	26	30	5,995	417	30	......	137	250	309	5,269	3,778	[3]1,491
23	Other fields [6]	51	229	92	49	10	221	52	32	5	7	13	12	157	109	48
	STATES.															
24	California [5]	342	4,316	708	34	71	8,081	651	113	13	193	345	423	7,007	5,049	[3]1,958
25	Colorado [7]	22	75	39	28	9	149	23	16	3	2	5	......	126	85	41
26	Production only [7]	16	17	......	......	1	21	15	12	3	1	2	......	6	4	2
27	Production and drilling of new wells	6	58	39	28	8	128	8	4	......	1	3	......	120	81	39
28	Illinois	323	10,918	2,537	384	205	5,188	1,004	817	22	51	136	125	4,059	3,281	778
29	Production only	130	1,219	......	......	11	543	360	331	10	15	14	20	163	153	10
30	Production and drilling of new wells	193	9,699	2,537	384	194	4,645	644	486	12	36	122	105	3,896	3,128	768
31	Indiana	644	10,373	382	90	1,762	3,950	2,518	2,277	24	141	100	87	1,345	1,034	311
32	Production only	569	4,314	......	......	549	1,953	1,544	1,418	22	71	55	34	375	297	78
33	Production and drilling of new wells	75	6,059	382	90	1,213	1,997	974	859	2	70	45	53	970	737	233
34	Kansas	217	3,402	597	190	349	1,743	300	178	12	37	85	141	1,302	397	905
35	Production only	143	1,616	......	......	131	318	168	119	8	18	31	20	130	108	22
36	Production and drilling of new wells	74	1,786	597	190	218	1,425	132	59	4	19	54	121	1,172	289	883
37	Kentucky	85	1,109	143	56	32	386	157	123	10	15	19	23	206	136	70
38	Production only	55	501	......	......	16	153	94	81	4	5	8	11	48	38	10
39	Production and drilling of new wells	30	608	143	56	16	233	63	42	6	10	11	12	158	98	60
40	Louisiana [5]	31	246	112	30	38	682	121	72	1	25	24	38	523	355	[3]168
41	New York	708	11,342	450	19	73	2,087	1,657	1,582	179	34	41	56	374	291	83
42	Production only	559	7,030	......	......	24	1,440	1,288	1,264	127	10	14	20	132	118	14
43	Production and drilling of new wells	149	4,312	450	19	49	647	369	318	52	24	27	36	242	173	69
44	Ohio	1,195	35,067	2,391	539	1,436	9,312	2,863	2,408	281	170	285	552	5,897	3,263	[3]2,634
45	Production only	786	11,397	......	......	362	3,226	1,770	1,629	198	60	81	274	1,182	477	705
46	Production and drilling of new wells	409	23,670	2,391	539	1,074	6,086	1,093	779	83	110	204	278	4,715	2,786	1,929
47	Oklahoma	711	12,113	2,203	186	155	4,439	1,013	499	23	187	327	360	3,066	2,336	730
48	Production only	323	3,147	......	......	40	1,022	422	266	11	57	99	94	506	432	74
49	Production and drilling of new wells	388	8,966	2,203	186	115	3,417	591	233	12	130	228	266	2,560	1,904	656
50	Pennsylvania	3,030	59,780	3,344	349	863	15,451	7,515	7,087	1,482	147	281	539	7,397	4,317	[3]3,080
51	Production only	2,147	22,662	......	......	185	5,991	4,901	4,811	1,102	25	65	54	1,036	924	112
52	Production and drilling of new wells	883	37,118	3,344	349	678	9,460	2,614	2,276	380	122	216	485	6,361	3,393	2,968
53	Texas [8]	159	2,116	640	189	208	1,745	302	218	47	21	63	60	1,383	1,026	[3]357
54	Production only [8]	69	576	1	1	15	235	129	112	21	4	13	1	105	91	14
55	Production and drilling of new wells [8]	90	1,540	639	188	193	1,510	173	106	26	17	50	59	1,278	935	343
56	West Virginia	442	15,146	1,774	216	665	8,606	1,129	807	56	96	226	384	7,093	5,462	1,631
57	Production only	256	2,729	......	......	47	912	590	538	43	13	39	22	300	262	38
58	Production and drilling of new wells	186	12,417	1,774	216	618	7,694	539	269	13	83	187	362	6,793	5,200	1,593
59	All other states [9]	33	317	92	26	5	99	32	16	2	6	10	14	53	31	22
60	Production only	16	76	......	......	1	29	15	11	......	2	2	4	10	9	1
61	Production and drilling of new wells	17	241	92	26	4	70	17	5	2	4	8	10	43	22	21

---

[1] Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields or states. These duplications have not been eliminated from the figures for the different classes.

[2] The following numbers which can not be distributed by fields and states are properly distributed in the total: Aggregate, 254; total, 68; salaried officers of corporations, 28; superintendents and managers, 40; and clerks and other subordinate salaried employees, 186. The fields affected are: Appalachian, Lima-Indiana, Illinois, Mid-Continent, Gulf, California-Coastal and southern, and California-San Joaquin Valley. The states affected are: California, Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia.

[3] Includes 11 boys under 16 years of age distributed as follows: Appalachian field, 3; Gulf field, 7; California-San Joaquin Valley field, 1; California, 1; Louisiana, 1 Ohio, 2; Pennsylvania, 1; Texas, 6.

[4] Excludes Tennessee in order to avoid disclosing individual operations.

[5] "Production only" and "Production and drilling of new wells" not shown separately, in order to avoid disclosing individual operations.

[6] Includes Tennessee in order to avoid disclosing individual operations. See also note 5.

[7] Excludes 1 operator of a gas well in order to avoid disclosing individual operations.

[8] The total excludes 4 operators of gas wells, of whom 1 is classified as "Production only" and 3 are classified as "Production and drilling of new wells," in order to avoid disclosing individual operations.

[9] Includes operators distributed as follows: Arkansas, 3; Colorado, 1 (operator of gas well); Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4 (operators of gas wells); and Wyoming, 7.

PETROLEUM AND NATURAL GAS—DETAILED STATISTICS OF PRODUCING

	Table 49—Continued. FIELD, STATE, AND CHARACTER OF OPERATIONS.	Capital (dolls.).	EXPENSES OF OPERATION AND DEVELOPMENT.								
			Aggregate (dolls.).	Services.				Supplies, fuel, and rent of power.			
				Total (dolls.).	Salaried officers of corporations, superintendents, and managers (dolls.).	Clerks and other subordinate salaried employees (dolls.).	Wage earners (dolls.).	Total (dolls.).	Supplies and materials (dolls.).	Fuel and rent of power (dolls.).	Cost of purchased gas (dolls.).
1	**United States**	[2] 683,268,497	135,638,644	[3] 34,333,531	[3] 4,848,224	[3] 2,393,657	27,091,650	51,280,485	39,947,013	1,444,595	9,888,877
2	**Production only**	104,311,432	14,346,947	3,964,107	700,557	389,723	2,873,827	5,986,546	1,566,404	171,436	4,248,706
3	**Production and drilling of new wells**	671,267,661	121,291,697	29,963,201	3,905,303	1,840,075	24,217,823	45,293,939	38,380,609	1,273,159	5,640,171
	FIELDS.										
4	Appalachian [4]	344,007,846	68,498,187	[3] 14,691,643	[3] 1,899,795	[3] 1,151,210	11,640,638	25,851,013	15,715,105	989,121	9,146,787
5	Production only	64,228,673	9,005,030	1,924,335	267,806	291,510	1,365,019	4,856,504	822,603	96,450	3,937,451
6	Production and drilling of new wells	279,779,173	59,493,157	12,767,308	1,631,989	859,700	10,275,619	20,994,509	14,892,502	892,671	5,209,336
7	Lima-Indiana	27,934,429	4,359,494	[3] 1,539,091	[3] 236,609	[3] 74,798	1,227,684	1,020,436	649,555	88,299	282,582
8	Production only	11,749,874	1,667,199	579,662	85,238	25,773	468,651	442,436	153,392	14,667	274,377
9	Production and drilling of new wells	16,184,555	2,692,295	959,429	151,371	49,025	759,033	578,000	496,163	73,632	8,205
10	Illinois	34,366,518	13,476,053	[3] 3,062,669	[3] 337,189	[3] 99,109	2,626,371	4,126,948	4,075,483	38,752	12,713
11	Production only	2,475,656	433,690	135,823	22,844	6,705	106,274	50,318	40,363	9,955	....
12	Production and drilling of new wells	31,890,862	13,042,363	2,926,846	314,345	92,404	2,520,097	4,076,630	4,035,120	28,797	12,713
13	Mid-Continent	102,990,290	18,350,832	[3] 4,419,995	[3] 921,052	[3] 349,610	3,149,333	5,622,585	5,113,896	73,244	435,445
14	Production only	17,057,176	1,879,662	754,311	190,451	45,578	518,282	295,977	237,003	22,257	36,717
15	Production and drilling of new wells	85,933,114	16,471,170	3,665,684	730,601	304,032	2,631,051	5,326,608	4,876,893	50,987	398,728
16	Gulf	16,692,316	5,039,888	[3] 2,007,907	[3] 230,252	[3] 195,659	1,581,996	1,662,711	1,559,214	96,297	7,200
17	Production only	1,498,138	214,157	123,113	21,812	6,140	95,161	39,197	33,901	5,296	....
18	Production and drilling of new wells	15,194,178	4,825,731	1,884,794	208,440	189,519	1,486,835	1,623,514	1,525,313	91,001	7,200
19	California-Coastal and southern	32,684,916	5,800,602	[3] 1,946,329	[3] 268,674	[3] 80,041	1,597,614	2,905,254	2,826,787	77,633	834
20	Production only	2,654,657	269,651	113,185	23,867	5,706	83,612	61,712	46,499	15,213	....
21	Production and drilling of new wells	30,030,259	5,530,951	1,833,144	244,807	74,335	1,514,002	2,843,542	2,780,288	62,420	834
22	California-San Joaquin Valley [5]	113,799,314	19,409,485	[3] 6,087,323	[3] 683,595	[3] 273,485	5,130,243	9,758,582	9,706,133	49,133	3,316
23	Other fields [7]	3,103,354	704,103	172,351	28,694	5,886	137,771	332,956	300,840	32,116	....
	STATES.										
24	California [4]	146,484,230	25,210,087	[3] 8,033,652	[3] 952,269	[3] 353,526	6,727,857	12,663,836	12,532,920	126,766	4,150
25	Colorado [6]	1,444,800	327,355	131,651	13,724	....	117,927	145,033	116,312	28,721	....
26	Production only [3]	391,800	11,191	4,460	2,324	....	2,136	1,360	561	799	....
27	Production and drilling of new wells	1,053,000	316,164	127,191	11,400	....	115,791	143,673	115,751	27,922	....
28	Illinois	34,366,518	13,476,053	[3] 3,062,669	[3] 337,189	[3] 99,109	2,626,371	4,126,948	4,075,483	38,752	12,713
29	Production only	2,475,656	433,690	135,823	22,844	6,705	106,274	50,318	40,363	9,955	....
30	Production and drilling of new wells	31,890,862	13,042,363	2,926,846	314,345	92,404	2,520,097	4,076,630	4,035,120	28,797	12,713
31	Indiana	16,836,419	2,483,585	[3] 1,051,870	[3] 173,911	[3] 60,206	817,753	494,173	395,697	75,881	22,595
32	Production only	4,403,436	657,917	329,362	55,169	14,682	259,511	94,247	68,794	10,963	14,490
33	Production and drilling of new wells	12,432,983	1,825,668	722,508	118,742	45,524	558,242	399,926	326,903	64,918	8,105
34	Kansas	37,072,298	4,018,459	819,886	180,479	123,325	516,082	1,122,696	845,783	7,368	269,545
35	Production only	4,414,793	308,650	133,143	39,478	8,528	85,137	60,255	19,729	4,952	35,574
36	Production and drilling of new wells	32,657,505	3,709,809	686,743	141,001	114,797	430,945	1,062,441	826,054	2,416	233,971
37	Kentucky	5,146,459	577,908	178,305	35,154	17,819	125,332	178,165	172,095	6,070	....
38	Production only	2,228,731	146,744	46,911	9,838	3,828	33,245	38,581	37,173	1,408	....
39	Production and drilling of new wells	2,917,728	431,164	131,394	25,316	13,991	92,087	139,584	134,922	4,662	....
40	Louisiana [4]	8,049,682	2,134,807	[3] 794,157	[3] 88,626	[3] 132,226	573,305	641,405	613,459	20,746	7,200
41	New York	14,903,354	1,558,691	[3] 324,984	[3] 61,726	[3] 26,315	236,943	494,753	420,408	8,689	65,656
42	Production only	8,377,859	379,501	91,090	11,080	4,334	75,676	49,513	43,884	2,379	3,250
43	Production and drilling of new wells	6,525,495	1,179,190	233,894	50,646	21,981	161,267	445,240	376,524	6,310	62,406
44	Ohio	92,923,090	21,233,439	[3] 4,138,323	[3] 541,476	[3] 451,240	3,145,607	9,523,464	4,009,599	137,790	5,376,075
45	Production only	30,089,803	6,359,703	967,440	133,951	262,212	571,277	4,456,001	307,662	18,985	4,129,354
46	Production and drilling of new wells	62,833,287	14,873,736	3,170,883	407,525	189,028	2,574,330	5,067,463	3,701,937	118,805	1,246,721
47	Oklahoma	62,739,176	12,950,891	[3] 3,203,485	[3] 707,663	[3] 221,155	2,274,667	4,083,087	3,894,782	57,718	130,587
48	Production only	11,111,553	1,494,913	594,761	146,203	37,050	411,508	216,381	201,182	14,056	1,143
49	Production and drilling of new wells	51,627,623	11,455,978	2,608,724	561,460	184,105	1,863,159	3,866,706	3,693,600	43,662	129,444
50	Pennsylvania	173,321,609	21,998,980	[3] 5,348,952	[3] 748,538	[3] 455,702	4,144,712	8,502,931	5,032,525	399,027	3,071,379
51	Production only	25,351,021	2,350,284	747,039	83,347	25,000	638,692	542,930	443,050	65,814	34,066
52	Production and drilling of new wells	147,970,588	19,648,696	4,601,913	665,191	430,702	3,506,020	7,960,001	4,589,475	333,213	3,037,313
53	Texas [9]	11,344,567	4,067,567	[3] 1,595,409	[3] 171,236	[3] 65,593	1,358,580	1,326,906	1,243,824	83,082	....
54	Production only	2,172,720	189,911	80,210	13,012	300	66,898	42,544	35,599	6,945	....
55	Production and drilling of new wells	9,171,847	3,877,656	1,515,199	158,224	65,293	1,291,682	1,284,362	1,208,225	76,137	....
56	West Virginia	68,811,344	25,005,078	[3] 5,188,300	[3] 575,599	[3] 214,726	4,397,975	7,677,963	6,334,336	449,963	893,664
57	Production only	5,527,697	778,080	322,155	59,659	7,227	255,269	117,668	75,432	11,568	30,668
58	Production and drilling of new wells	63,283,647	24,226,998	4,866,145	515,940	207,499	4,142,706	7,560,295	6,258,904	438,395	862,996
59	All other states [10]	2,135,437	505,744	55,665	18,270	8,856	28,539	299,125	259,790	4,022	35,313
60	Production only	544,650	33,083	10,605	5,900	1,311	3,394	12,445	11,315	1,130	....
61	Production and drilling of new wells	1,590,787	562,661	45,060	12,370	7,545	25,145	286,680	248,475	2,892	35,313

---

[1] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

[2] Includes $7,689,514, which can not be distributed among the several states and fields. The fields affected are: Appalachian, Lima-Indiana, Illinois, Mid-Continent, and Gulf. The states affected are: Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia.

[3] The amounts included in "Rent of offices and other sundry expenses" for states and fields and properly distributed in the total for the United States are as follows: Salaried officers of corporations, superintendents, and managers, $242,364; clerks and other subordinate salaried employees, $163,859; taxes, $32,352; and contract work, $107,259. The fields affected are: Appalachian, Lima-Indiana, Illinois, Mid-Continent, Gulf, California-Coastal and southern, and California-San Joaquin Valley. The states affected are: California, Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia. (See Introduction, "Administrative expenses of general offices.")

[4] The total includes minor products valued at $114,758, distributed as follows: Appalachian field, $33,437; Lima-Indiana field, $3,028; Mid-Continent field, $90; Gulf field, $9,803; California-Coastal and southern field, $6,220; California-San Joaquin Valley field, $57,880; other fields, $4,300; California, $64,100; Colorado, $4,300; Indiana, $3,028; Kansas, $90; Louisiana, $1,163; Ohio, $17,745; Pennsylvania, $15,447; Texas, $8,640; and West Virginia, $245.

ENTERPRISES, BY CHARACTER OF OPERATIONS, BY FIELDS AND STATES: 1909—Continued.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.					PRIMARY POWER OWNED.				
	Miscellaneous.					Per cent of total.					Total value[1] (dolls.).	Petroleum.		Natural gas.[1]		Total horsepower.	Steam engines.		Gas or gasoline engines.	
	Total (dolls.).	Contract work, including compensation of part-time employees (dolls.).	Royalties and rent of wells (dolls.).	Taxes (dolls.).	Rent of offices and other sundry expenses (dolls.).	Services.	Supplies.	Contract work.	Royalties and rent of wells.	Other miscellaneous.		Barrels (42 gals.).	Value at well (dolls.).	M cubic feet.	Value at well (dolls.).		Number.	Horsepower.	Number.	Horsepower.
1	[3] 50,024,628	[3]16,736,510	21,282,820	[3]2,676,986	[3]9,428,312	26.3	37.8	12.3	15.7	8.9	[4]185,416,684	171,559,384	117,696,529	559,800,480	67,605,397	1,221,809	36,828	746,658	21,762	475,151
2	4,396,294	810,332	2,356,683	504,030	725,249	27.6	41.7	5.6	16.4	8.6	28,463,089	24,327,036	18,293,193	65,280,711	10,138,677	286,782	10,845	171,847	6,559	114,935
3	46,034,557	15,818,819	18,926,137	2,040,604	9,248,897	24.7	37.3	13.0	15.6	9.3	156,953,595	147,232,358	99,403,336	494,519,779	57,466,720	935,027	25,983	574,811	15,203	360,216
4	[3]27,955,531	[3]10,718,497	10,439,176	[3]1,625,597	[3]5,172,261	21.5	37.7	15.6	15.2	9.9	[4] 97,764,641	26,811,032	40,977,227	444,575,503	56,753,977	918,597	30,539	606,825	15,181	311,772
5	2,224,191	502,571	1,033,124	354,791	333,705	21.4	53.9	5.6	11.5	7.6	17,627,317	5,581,649	8,857,063	62,575,651	8,752,326	226,412	10,068	154,257	4,413	72,155
6	25,731,340	10,215,926	9,406,052	1,270,806	4,838,556	21.5	35.3	17.2	15.8	10.3	80,137,324	21,229,383	32,120,164	391,999,852	48,001,651	692,185	20,471	452,568	10,768	239,617
7	[3] 1,799,967	[3] 639,370	675,594	[3] 118,231	[3] 366,772	35.3	23.4	14.7	15.5	11.1	[4] 6,027,776	4,673,964	4,079,482	8,111,144	1,945,266	57,691	274	8,205	2,413	49,486
8	645,101	149,607	337,280	56,767	101,447	34.8	26.5	9.0	20.2	9.5	3,023,088	2,342,041	2,074,684	4,829,388	945,376	30,320	130	3,018	1,379	27,302
9	1,154,866	489,763	338,314	61,464	265,325	35.6	21.5	18.2	12.6	12.1	3,004,688	2,331,923	2,004,798	3,281,756	999,890	27,371	144	5,187	1,034	22,184
10	[3] 6,286,436	[3] 2,302,651	2,776,068	[3] 72,107	[3]1,135,610	22.7	30.6	17.1	20.6	9.0	18,895,815	29,146,231	18,329,637	5,538,660	566,178	40,615	247	4,720	1,541	35,895
11	247,549	18,602	190,259	5,950	32,738	31.3	11.6	4.3	43.9	8.9	1,189,592	1,884,056	1,186,013	17,027	3,579	3,515	24	436	149	3,079
12	6,038,887	2,284,049	2,585,809	66,157	1,102,872	22.4	31.3	17.5	19.8	9.0	17,706,223	27,262,175	17,143,624	5,521,633	562,599	37,100	223	4,284	1,392	32,816
13	[3] 8,308,252	[3] 2,496,709	3,953,542	[3] 391,667	[3]1,466,334	24.1	30.6	13.6	21.5	10.1	[4] 26,058,280	49,128,533	18,250,632	98,527,563	7,807,558	101,352	2,017	44,803	1,609	56,549
14	829,374	103,694	489,343	60,759	175,578	40.1	15.7	5.5	26.0	12.6	4,150,984	10,386,214	3,795,731	7,113,899	355,253	17,361	359	6,843	531	10,518
15	7,478,878	2,393,015	3,464,199	330,908	1,290,756	22.3	32.3	14.5	21.0	9.8	21,907,296	38,742,319	14,454,901	91,413,664	7,452,305	83,991	1,658	37,960	1,078	46,031
16	[3] 1,369,270	[3] 82,928	954,092	[3] 50,064	[3] 282,186	39.8	33.0	1.6	18.9	6.6	[4] 6,877,891	9,377,844	6,667,092	703,666	200,996	23,992	1,014	22,612	75	1,380
17	51,847	5,213	33,805	3,622	9,207	57.5	18.3	2.4	15.8	6.0	451,728	641,605	448,335	23,795	2,230	1,384	58	1,359	1	25
18	1,317,423	77,715	920,287	46,442	272,979	39.1	33.6	1.6	19.1	6.6	6,426,163	8,736,239	6,218,757	679,871	198,766	22,608	956	21,253	74	1,355
19	[3] 949,019	[3] 68,527	522,193	[3] 114,265	[3] 244,034	33.6	50.1	1.2	9.0	6.2	[4] 7,009,700	11,277,375	6,989,033	134,020	14,447	18,410	643	13,667	228	4,743
20	94,754	24,336	41,682	11,871	16,865	42.0	22.9	9.0	15.5	10.7	479,818	664,884	472,592	5,490	2,426	2,161	40	757	60	1,404
21	854,265	44,191	480,511	102,394	227,169	33.1	51.4	0.8	8.7	6.0	6,529,882	10,612,491	6,516,441	128,530	12,021	16,249	603	12,910	168	3,339
22	[3] 3,563,580	[3]204,106	1,938,790	[3] 162,404	[3]1,258,280	31.4	50.3	1.1	10.0	7.3	[4] 22,300,635	40,826,778	22,077,756	188,876	164,999	58,149	2,069	42,971	702	15,178
23	198,796	116,463	23,365	10,299	48,669	24.5	47.3	16.5	3.3	8.4	[4] 481,946	317,637	325,670	2,021,058	151,976	3,003	125	2,855	13	148
24	[3] 4,512,599	[3] 272,633	2,460,983	[3] 276,669	[3]1,502,314	31.9	50.2	1.1	9.8	7.1	[4] 29,310,335	52,104,153	29,066,789	322,896	179,446	76,559	2,712	56,638	930	19,921
25	50,671	2,951	7,695	8,140	31,885	40.2	44.3	0.9	2.4	12.2	[4] 313,168	305,030	308,611	28	257	2,472	112	2,397	4	75
26	5,371	2,501	1,132	590	1,148	39.9	12.2	22.3	10.1	15.5	21,762	16,087	17,455	28	7	432	18	432	......	......
27	45,300	450	6,563	7,550	30,737	40.2	45.4	0.1	2.1	12.1	291,406	288,943	291,156	....	250	2,040	94	1,965	4	75
28	[3] 6,286,436	[3] 2,302,651	2,776,068	[3] 72,107	[3]1,135,610	22.7	30.6	17.1	20.6	9.0	18,895,815	29,146,231	18,329,637	5,538,660	566,178	40,615	247	4,720	1,541	35,895
29	247,549	18,602	190,259	5,950	32,738	31.3	11.6	4.3	43.9	8.9	1,189,592	1,884,056	1,186,013	17,027	3,579	3,515	24	436	149	3,079
30	6,038,887	2,284,049	2,585,809	68,157	1,102,872	22.4	31.3	17.5	19.8	9.0	17,706,223	27,262,175	17,143,624	5,521,633	562,599	37,100	223	4,284	1,392	32,816
31	[3] 937,542	[3] 276,022	319,833	[3] 73,362	[3] 268,325	42.4	19.9	11.1	12.9	13.8	[4] 3,224,619	2,079,977	1,741,475	5,992,652	1,480,116	28,159	147	5,945	916	22,214
32	234,308	27,338	127,060	26,440	53,470	50.1	14.3	4.2	19.3	12.1	1,211,660	809,463	693,584	2,808,057	514,948	10,727	62	1,800	379	8,927
33	703,234	248,684	192,773	46,922	214,855	39.6	21.9	13.6	10.6	14.3	2,013,059	1,270,514	1,047,891	3,184,595	965,168	17,432	85	4,145	537	13,287
34	2,075,877	293,060	1,215,270	122,230	445,317	20.4	27.9	7.3	30.2	14.1	[4] 6,681,780	1,182,293	462,512	69,619,109	6,219,178	36,441	41	6,344	264	30,097
35	115,252	18,329	65,201	9,717	22,005	43.1	19.5	5.9	21.1	10.3	613,127	888,561	349,326	5,707,179	263,801	3,722	27	591	156	3,131
36	1,960,625	274,731	1,150,069	112,513	423,312	18.5	28.6	7.4	31.0	14.4	6,068,653	293,732	113,186	63,911,930	5,955,377	32,719	14	5,753	108	26,966
37	221,438	96,514	68,917	22,488	33,519	30.9	30.8	16.7	11.9	9.7	892,281	535,486	410,282	2,126,260	481,999	4,351	59	1,049	153	3,302
38	61,252	13,641	28,614	10,565	8,412	32.0	26.3	9.3	19.5	12.9	370,356	179,468	136,638	1,180,211	233,718	1,512	20	400	76	1,112
39	160,186	82,873	40,303	11,903	25,107	30.5	32.4	19.2	9.3	8.6	521,925	356,018	273,644	946,049	248,281	2,839	39	649	77	2,190
40	[3] 699,245	[3] 62,440	496,198	[3] 13,912	[3] 126,695	37.2	30.0	2.9	23.2	6.6	[4] 2,177,986	2,889,919	1,976,007	699,166	200,816	5,345	218	5,150	10	195
41	[3] 738,954	[3] 405,184	195,802	[3] 64,657	[3] 73,311	20.8	31.7	26.0	12.6	8.9	2,668,996	1,159,185	1,887,630	3,138,130	781,366	41,797	1,761	25,378	1,173	16,419
42	238,898	97,994	92,616	27,128	21,160	24.0	13.0	25.8	24.4	12.7	1,181,777	674,407	1,093,687	405,262	88,090	24,257	893	12,885	816	11,372
43	500,056	307,190	103,186	37,529	52,151	19.8	37.8	26.0	8.8	7.6	1,487,219	484,778	793,943	2,732,868	693,276	17,540	868	12,493	357	5,047
44	[3] 7,571,652	[3] 2,879,315	2,674,350	[3] 585,542	[3]1,432,445	19.5	44.9	13.6	12.6	9.5	[4] 29,620,959	9,263,948	11,302,653	98,088,778	18,300,561	167,027	3,307	70,090	3,962	96,937
45	936,262	182,712	361,669	254,632	137,249	15.2	70.1	2.9	5.7	6.2	9,818,113	2,198,826	2,437,668	31,355,081	7,362,700	41,712	655	12,953	1,431	28,759
46	6,635,390	2,696,603	2,312,681	330,910	1,295,196	21.3	34.1	18.1	15.5	10.9	19,802,846	7,065,122	8,864,985	66,733,697	10,937,861	125,315	2,652	57,137	2,531	68,178
47	[3] 5,664,319	[3] 2,103,273	2,331,198	[3] 261,631	[3] 968,217	24.7	31.5	16.2	18.0	9.5	17,685,092	45,671,724	16,233,865	28,063,558	1,451,227	60,496	1,818	35,022	1,289	25,474
48	683,771	78,779	403,760	48,738	152,494	39.8	14.5	5.3	27.0	13.5	3,353,360	9,187,356	3,262,058	1,406,120	91,302	12.913	321	6,020	345	6,893
49	4,980,548	2,024,494	1,927,438	212,893	815,723	22.8	33.8	17.7	16.8	9.0	14,331,732	36,484,368	12,971,807	26,657,438	1,359,925	47,583	1,497	29,002	944	18,581
50	[3] 8,147,097	[3] 3,297,185	2,934,063	[3] 521,436	[3]1,394,413	24.3	38.7	15.0	13.3	8.7	[4] 39,197,475	8,543.806	13,938,626	187,269,269	25,243,402	478,846	18,706	339,194	8,062	139,652
51	1,060.315	286,097	549,042	65,807	159,369	31.8	23.1	12.2	23.4	9.6	5,849,294	3,239,804	5,278,613	5,993,585	570,498	157,629	7,885	115,161	2,674	42,468
52	7,086,782	3,011,088	2,385,021	455,629	1,235,044	23.4	40.5	15.3	12.1	8.6	33,348,181	5,304,002	8,660,013	181,275,684	24,672,904	321,217	10,821	224,033	5,388	97,184
53	[3] 1,145,252	[3] 75,360	823,638	[3] 42,323	[3] 203,931	39.2	32.6	1.9	20.2	6.1	[4] 6,214,538	8,682,868	6,196,951	38,256	8,947	22,799	952	20,859	110	1,940
54	67,157	10,486	47,981	3,370	5,320	42.2	22.4	5.5	25.3	4.6	420,008	635,401	419,828	4,500	180	1,635	51	1,141	30	494
55	1,078,095	64,874	775,657	38,953	198,611	39.1	33.1	1.7	20.0	6.1	5,794,530	8,047,467	5,777,123	33,756	8,767	21,164	901	19,718	80	1,446
56	[3] 12,138,815	[3] 4,403,647	4,921,805	[3] 476,343	[3]2,337,020	20.7	30.7	17.6	19.7	11.3	[4] 28,188,087	9,902,594	15,776,043	156,071,558	12,411,799	256,108	6,833	173,374	3,328	82,734
57	338,257	44,396	211,403	26,966	55,492	41.4	15.1	5.7	27.2	10.6	2,219,305	821,722	1,291,557	15,662,843	927,748	20,895	683	14,076	416	6,819
58	11,800,558	4,359,251	4,710,402	449,377	2,281,528	20.1	31.2	18.0	19.4	11.3	25,968,782	9,080,872	14,484,486	140,408,715	11,484,051	235,213	6,150	159,298	2,912	75,915
59	240,954	159,016	57,000	3,794	21,144	9.3	50.2	26.7	9.6	4.2	345,553	92,180	65,448	2,832,170	280,105	794	15	498	20	236
60	10,033	1,320	2,457	645	5,611	32.1	37.6	4.0	7.4	18.9	61,809	5,750	8,430	667,856	53,379	298	6	270	3	28
61	230,921	157,696	54,543	3,149	15,533	8.0	51.0	28.0	9.7	3.3	283,744	86,430	57,018	2,164,314	226,726	496	9	228	17	268

---

[5] Excludes Tennessee in order to avoid disclosing individual operations.

[6] "Production only" and "Production and drilling of new wells" not shown separately, in order to avoid disclosing individual operations.

[7] Includes Tennessee in order to avoid disclosing individual operations. See also note 6.

[8] Excludes 1 operator of a gas well in order to avoid disclosing individual operations.

[9] The total excludes 4 operators of gas wells, of whom 1 is classified as "Production only" and 3 are classified as "Production and drilling of new wells," in order to avoid disclosing individual operations.

[10] Includes operators distributed as follows: Arkansas, 3; Colorado, 1 (operator of a gas well); Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4 (operators of gas wells); and Wyoming, 7.

PETROLEUM—DETAILED STATISTICS OF ENTERPRISES BY CHARACTER OF OPERATIONS, BY FIELDS AND STATES: 1909.

	Table 50 FIELD, STATE, AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.									
			Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners, Dec. 15 or nearest representative day.		
				Total.	Dry.			Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Total.	Men 16 years of age and over.	
									Total.	Number performing manual labor.					Engineers, firemen, mechanics, etc.	All other employees.
1	**United States**	6,683	129,422	11,451	1,590	4,147	40,245	14,990	13,064	2,068	641	1,285	1,222	24,033	19,153	[1] 4,880
2	**Production only**	4,393	52,687	1	1	1,164	13,128	9,384	8,846	1,507	186	352	275	3,467	3,098	369
3	**Production and drilling of new wells**	2,290	76,735	11,450	1,589	2,983	27,119	5,606	4,218	561	455	933	947	20,566	16,055	4,511
	FIELDS.															
4	Appalachian	4,257	77,839	4,756	683	1,426	16,612	10,212	9,764	1,752	137	311	214	6,186	5,486	700
5	Production only	2,998	33,973			288	8,477	6,818	6,669	1,278	40	109	82	1,577	1,421	156
6	Production and drilling of new wells	1,259	43,866	4,756	683	1,138	8,135	3,394	3,095	474	97	202	132	4,609	4,065	544
7	Lima-Indiana	781	20,728	521	80	1,972	3,371	1,599	1,463	199	52	84	62	1,710	1,508	202
8	Production only	644	11,698			727	1,947	1,298	1,220	165	32	46	36	613	569	44
9	Production and drilling of new wells	137	9,030	521	80	1,245	1,424	301	243	34	20	38	26	1,097	939	158
10	Illinois	311	10,815	2,495	374	183	5,115	989	809	22	49	131	111	4,015	3,256	759
11	Production only	126	1,207			5	536	357	328	10	15	14	20	159	150	9
12	Production and drilling of new wells	185	9,608	2,495	374	178	4,579	632	481	12	34	117	91	3,856	3,106	750
13	Mid-Continent	851	14,330	2,392	224	315	5,009	1,221	706	39	173	342	339	3,449	2,679	770
14	Production only	456	4,733	1	1	124	1,354	618	437	23	61	120	99	637	544	93
15	Production and drilling of new wells	395	9,597	2,391	223	191	3,655	603	269	16	112	222	240	2,812	2,135	677
16	Gulf	122	1,306	531	167	173	1,940	309	197	39	39	73	86	1,545	1,084	[1] 461
17	Production only	32	90			2	258	120	101	16	8	11	10	128	95	33
18	Production and drilling of new wells	90	1,216	531	167	171	1,682	189	96	23	31	62	76	1,417	989	428
19	California-Coastal and southern	139	1,558	111	8	39	2,080	228	77	13	56	95	114	1,738	1,271	467
20	Production only	80	644			14	211	98	73	12	7	18	14	99	89	10
21	Production and drilling of new wells	59	914	111	8	25	1,869	130	4	1	49	77	100	1,639	1,182	457
22	California-San Joaquin Valley	192	2,728	596	25	30	5,950	406	29		133	244	296	5,248	3,771	[1] 1,477
23	Production only	38	295			3	314	59	5		22	32	14	241	220	21
24	Production and drilling of new wells	154	2,433	596	25	27	5,636	347	24		111	212	282	5,007	3,551	1,456
25	Other fields	30	118	49	29	9	168	26	19	4	2	5		142	98	44
26	Production only	19	47			1	29	16	13	3	1	2		13	10	3
27	Production and drilling of new wells	11	71	49	29	8	139	10	6	1	1	3		129	88	41
	STATES.															
28	California	331	4,286	707	33	69	8,030	634	106	13	189	339	410	6,986	5,042	[1] 1,944
29	Production only	118	939			17	525	157	78	12	29	50	28	340	309	31
30	Production and drilling of new wells	213	3,347	707	33	52	7,505	477	28	1	160	289	382	6,646	4,733	1,913
31	Colorado	22	75	39	28	9	149	23	16	3	2	5		126	85	41
32	Production only	16	17			1	21	15	12	3	1	2		6	4	2
33	Production and drilling of new wells	6	58	39	28	8	128	8	4		1	3		120	81	39
34	Illinois	311	10,815	2,495	374	183	5,115	989	809	22	49	131	111	4,015	3,256	759
35	Production only	126	1,207			5	536	357	328	10	15	14	20	159	150	9
36	Production and drilling of new wells	185	9,608	2,495	374	178	4,579	632	481	12	34	117	91	3,856	3,106	750
37	Indiana	187	8,121	169	29	1,498	1,399	286	238	20	20	28	25	1,088	926	162
38	Production only	161	3,016			442	539	234	208	19	11	15	7	298	272	26
39	Production and drilling of new wells	26	5,105	169	29	1,056	860	52	30	1	9	13	18	790	654	136
40	Kansas	118	1,374	34	9	98	290	158	127	7	7	24	9	123	99	24
41	Production only	102	1,105			72	231	123	97	6	7	19	9	99	83	16
42	Production and drilling of new wells	16	269	34	9	26	59	35	30	1		5		24	16	8
43	Kentucky	70	952	119	51	32	304	133	109	9	11	13	12	159	126	33
44	Production only	44	425			16	131	79	68	4	5	6	8	44	38	6
45	Production and drilling of new wells	26	527	119	51	16	173	54	41	5	6	7	4	115	88	27
46	Louisiana	25	201	99	27	38	641	112	71	1	21	20	27	502	348	[1] 154
47	Production only	8	19				148	77	66	1	7	4	9	62	39	23
48	Production and drilling of new wells	17	182	99	27	38	493	35	5		14	16	18	440	309	131
49	New York	633	10,698	379	6	64	1,822	1,528	1,514	176	3	11	14	280	260	20
50	Production only	512	6,829			21	1,367	1,235	1,228	125	2	5	10	122	111	11
51	Production and drilling of new wells	121	3,869	379	6	43	455	293	286	51	1	6	4	158	149	9
52	Ohio	1,071	31,687	1,810	413	1,285	5,721	2,530	2,273	262	101	156	99	3,092	2,776	316
53	Production only	717	11,176			334	2,179	1,633	1,542	183	33	58	42	504	464	40
54	Production and drilling of new wells	354	20,511	1,810	413	951	3,542	897	731	79	68	98	57	2,588	2,312	276
55	Oklahoma	671	11,945	2,150	166	144	4,273	958	487	23	163	308	329	2,986	2,290	696
56	Production only	309	3,123			39	998	409	263	11	51	95	90	499	426	73
57	Production and drilling of new wells	362	8,822	2,150	166	105	3,275	549	224	12	112	213	239	2,487	1,864	623
58	Pennsylvania	2,748	41,829	2,258	179	418	8,879	6,568	6,438	1,432	23	107	73	2,238	2,051	187
59	Production only	1,994	21,883			158	5,472	4,441	4,380	1,071	12	49	37	994	888	106
60	Production and drilling of new wells	754	19,946	2,258	179	260	3,407	2,127	2,058	361	11	58	36	1,244	1,163	81
61	Texas	159	2,116	640	189	208	1,745	302	218	47	21	63	60	1,383	1,026	[1] 357
62	Production only	69	576	1	1	15	235	129	112	21	4	13	1	105	91	14
63	Production and drilling of new wells	90	1,540	639	188	193	1,510	173	106	26	17	50	59	1,278	935	343
64	West Virginia	329	5,280	542	85	101	1,858	766	655	52	31	80	53	1,039	855	184
65	Production only	214	2,342			44	736	494	463	41	9	22	14	228	217	11
66	Production and drilling of new wells	115	2,938	542	85	57	1,122	272	192	11	22	58	39	811	638	173
67	All other states [2]	8	43	10	1		19	3	3	1				16	13	3
68	Production only	3	30				8	1	1					7	6	1
69	Production and drilling of new wells	5	13	10	1		11	2	2	1				9	7	2

---

[1] Includes 8 boys under 16 years of age distributed as follows: Gulf field, 7; California-San Joaquin Valley field, 1; California, 1; Louisiana, 1; Texas, 6.

[2] Includes operators distributed as follows: Michigan, 1; Missouri, 2; Wyoming, 5.

PETROLEUM—DETAILED STATISTICS OF ENTERPRISES BY CHARACTER

Table 50—Continued.

	FIELD, STATE, AND CHARACTER OF OPERATIONS.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.							
			Aggregate.	Services.				Supplies, fuel, and rent of power.		
				Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Total.	Supplies and materials.	Fuel and rent of power.
1	**United States**	$360,422,056	$79,748,844	$22,597,940	$2,775,808	$984,392	$18,837,740	$29,114,627	[1] $28,456,178	$658,448
2	**Production only**	75,204,115	8,160,573	3,026,620	477,514	106,713	2,442,393	1,477,030	[1] 1,318,643	158,387
3	**Production and drilling of new wells**	285,217,941	71,588,271	19,571,320	2,298,294	877,679	16,395,347	27,637,597	[1] 27,137,536	500,061
	FIELDS.									
4	Appalachian	90,359,744	19,372,456	4,723,086	466,203	126,170	4,130,713	6,005,374	[1] 5,740,193	265,181
5	Production only	39,282,714	3,528,439	1,160,774	121,640	33,942	1,005,192	705,231	617,664	87,567
6	Production and drilling of new wells	51,077,030	15,844,017	3,562,312	344,563	92,228	3,125,521	5,300,143	[1] 5,122,529	177,614
7	Lima-Indiana	15,318,992	3,273,723	1,231,245	120,719	32,403	1,078,123	612,881	[1] 578,060	34,821
8	Production only	9,481,253	1,179,889	482,442	47,830	11,608	423,004	147,308	[1] 135,948	11,360
9	Production and drilling of new wells	5,837,739	2,093,834	748,803	72,889	20,795	655,119	465,573	442,112	23,461
10	Illinois	33,682,452	13,322,678	3,013,166	325,049	86,986	2,601,131	4,088,614	4,050,296	38,318
11	Production only	2,464,590	432,716	135,058	22,844	6,705	105,509	50,284	40,363	9,921
12	Production and drilling of new wells	31,217,862	12,889,962	2,878,108	302,205	80,281	2,495,622	4,038,330	4,009,933	28,397
13	Mid-Continent	64,388,049	13,405,485	3,541,326	702,588	204,133	2,634,605	4,000,420	[1] 3,930,720	69,700
14	Production only	15,872,858	1,698,583	691,375	160,482	36,732	494,161	246,291	224,849	21,442
15	Production and drilling of new wells	48,515,191	11,706,902	2,849,951	542,106	167,401	2,140,444	3,754,129	[1] 3,705,871	48,258
16	Gulf	11,489,778	4,890,777	1,954,250	208,296	187,534	1,558,420	1,603,887	1,508,031	95,856
17	Production only	1,495,090	213,645	123,113	21,812	6,140	95,161	39,115	33,819	5,296
18	Production and drilling of new wells	9,994,688	4,677,132	1,831,137	186,484	181,394	1,463,259	1,564,772	1,474,212	90,560
19	California-Coastal and southern	32,682,101	5,800,331	1,946,329	268,674	80,041	1,597,614	2,905,249	[1] 2,827,616	77,633
20	Production only	2,651,842	269,380	113,185	23,867	5,706	83,612	61,707	46,494	15,213
21	Production and drilling of new wells	30,030,259	5,530,951	1,833,144	244,807	74,335	1,514,002	2,843,542	[1] 2,781,122	62,420
22	California-San Joaquin Valley	110,607,640	19,299,688	6,048,592	670,555	267,125	5,110,912	9,721,606	9,675,048	46,558
23	Production only	3,394,468	822,599	313,893	76,715	5,880	231,298	224,564	218,895	5,669
24	Production and drilling of new wells	107,213,172	18,477,089	5,734,699	593,840	261,245	4,879,614	9,497,042	9,456,153	40,889
25	Other fields	1,893,300	383,706	139,946	13,724	....	126,222	176,596	146,215	30,381
26	Production only	561,300	15,322	6,780	2,324	....	4,456	2,530	611	1,919
27	Production and drilling of new wells	1,332,000	368,384	133,166	11,400	....	121,766	174,066	145,604	28,462
	STATES.									
28	California	143,289,741	25,100,019	7,994,921	939,229	347,166	6,708,526	12,626,855	[1] 12,502,664	124,191
29	Production only	6,046,310	1,091,979	427,078	100,582	11,586	314,910	286,271	265,389	20,882
30	Production and drilling of new wells	137,243,431	24,008,040	7,567,843	838,647	335,580	6,393,616	12,340,584	[1] 12,237,275	103,309
31	Colorado	1,444,800	327,355	131,651	13,724	....	117,927	145,033	116,312	28,721
32	Production only	391,800	11,191	4,460	2,324	....	2,136	1,360	561	799
33	Production and drilling of new wells	1,053,000	316,164	127,191	11,400	....	115,791	143,673	115,751	27,922
34	Illinois	33,682,452	13,322,678	3,013,166	325,049	86,986	2,601,131	4,088,614	4,050,296	38,318
35	Production only	2,464,590	432,716	135,058	22,844	6,705	105,509	50,284	40,363	9,921
36	Production and drilling of new wells	31,217,862	12,889,962	2,878,108	302,205	80,281	2,495,622	4,038,330	4,009,933	28,397
37	Indiana	4,505,512	1,699,816	756,414	62,498	21,704	672,212	351,740	329,334	22,406
38	Production only	2,338,445	449,884	238,517	20,518	4,135	213,864	60,233	52,574	7,659
39	Production and drilling of new wells	2,167,067	1,249,932	517,897	41,980	17,569	458,348	291,507	276,760	14,747
40	Kansas	4,169,186	219,742	106,479	19,499	2,062	84,918	23,091	18,419	4,672
41	Production only	3,524,106	160,221	82,301	16,034	2,062	64,205	15,433	11,296	4,137
42	Production and drilling of new wells	645,080	59,521	24,178	3,465	....	20,713	7,658	7,123	535
43	Kentucky	1,518,080	396,500	129,391	21,805	8,778	98,808	117,937	112,113	5,824
44	Production only	697,986	88,875	41,648	7,955	3,328	30,365	18,222	16,839	1,383
45	Production and drilling of new wells	820,094	307,625	87,743	13,850	5,450	68,443	99,715	95,274	4,441
46	Louisiana	2,847,144	1,985,696	740,500	66,670	124,101	549,729	582,581	562,276	20,305
47	Production only	852,000	99,823	69,310	13,570	5,840	49,900	15,912	14,312	1,600
48	Production and drilling of new wells	1,995,144	1,885,873	671,190	53,100	118,261	499,829	566,669	547,964	18,705
49	New York	11,736,894	1,068,331	215,227	15,622	5,724	193,881	304,036	297,636	6,400
50	Production only	7,809,754	337,797	76,016	3,845	1,552	70,619	42,119	39,740	2,379
51	Production and drilling of new wells	3,927,140	730,534	139,211	11,777	4,172	123,262	261,917	257,896	4,021
52	Ohio	31,510,313	8,869,931	2,369,487	236,565	62,775	2,070,147	2,381,895	[1] 2,269,208	112,687
53	Production only	11,488,291	1,193,471	407,405	57,333	14,424	335,648	172,910	[1] 161,828	11,082
54	Production and drilling of new wells	20,022,022	7,676,460	1,962,082	179,232	48,351	1,734,499	2,208,985	2,107,380	101,605
55	Oklahoma	57,516,930	12,023,257	3,053,188	653,479	199,911	2,199,798	3,671,729	[1] 3,614,232	57,497
56	Production only	10,819,122	1,462,273	582,667	139,678	34,670	408,319	211,517	197,461	14,056
57	Production and drilling of new wells	46,697,808	10,560,984	2,470,521	513,801	165,241	1,791,479	3,460,212	[1] 3,416,771	43,441
58	Pennsylvania	43,255,459	6,841,804	1,617,630	135,814	37,351	1,444,465	2,044,495	[1] 1,921,394	123,101
59	Production only	22,436,432	2,160,819	694,251	62,154	18,709	613,388	489,063	423,727	65,336
60	Production and drilling of new wells	20,819,027	4,680,985	923,379	73,660	18,642	831,077	1,555,432	[1] 1,497,667	57,765
61	Texas	11,344,567	4,067,567	1,595,409	171,236	65,593	1,358,580	1,326,906	1,243,824	83,082
62	Production only	2,172,720	189,911	80,210	13,012	300	66,898	42,544	35,599	6,945
63	Production and drilling of new wells	9,171,847	3,877,656	1,515,199	158,224	65,293	1,291,682	1,284,362	1,208,225	76,137
64	West Virginia	13,152,478	3,769,797	866,182	114,618	22,241	729,323	1,418,152	1,388,568	29,584
65	Production only	3,993,059	477,482	185,379	17,665	3,402	164,312	69,992	58,904	11,088
66	Production and drilling of new wells	9,159,419	3,292,315	680,803	96,953	18,839	565,011	1,348,160	1,329,664	18,496
67	All other states [3]	448,500	56,351	8,295	....	....	8,295	31,563	29,903	1,660
68	Production only	169,500	4,131	2,320	....	....	2,320	1,170	50	1,120
69	Production and drilling of new wells	279,000	52,220	5,975	....	....	5,975	30,393	29,853	540

---

[1] The cost of purchased gas, amounting to $3,946, which is included in supplies, is distributed as follows: California, $834; Ohio, $288; Oklahoma, $2,740; Pennsylvania, $84.

OF OPERATIONS, BY FIELDS AND STATES: 1909—Continued.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.			PRIMARY POWER OWNED.				
	Miscellaneous.					Per cent of total.					Total value.	Petroleum.		Total horsepower.	Steam engines.		Gas or gasoline engines.	
	Total.	Contract work, including compensation of part-time employees.	Royalties and rent of wells.	Taxes.	Rent of offices and other sundry expenses.	Services.	Supplies.	Contract work.	Royalties and rent of wells.	Other miscellaneous.		Barrels (42 gals.).	Value at well.		Number.	Horsepower.	Number.	Horse-power.
1	$28,036,277	$9,380,820	$12,509,181	$1,004,164	$5,142,112	28.3	36.5	11.8	15.7	7.7	$104,650,845	162,581,408	$103,600,756	730,634	25,564	435,120	16,106	295,514
2	3,656,923	757,525	2,127,456	239,648	532,394	37.1	18.1	8.3	26.1	8.5	16,212,838	24,098,412	18,091,011	274,546	10,782	166,660	6,394	107,886
3	24,379,354	8,623,295	10,381,725	764,616	4,609,716	27.3	38.6	12.0	14.5	7.5	86,338,007	138,462,896	85,509,746	456,088	14,772	268,460	9,712	187,628
4	8,643,996	4,248,637	3,055,991	305,606	1,033,762	24.4	31.0	21.9	15.8	6.9	27,306,784	18,177,293	27,052,296	467,823	19,272	306,166	9,707	161,657
5	1,662,434	469,369	872,578	114,719	205,768	32.9	20.0	13.3	24.7	9.1	8,772,295	5,485,149	8,709,581	216,883	9,929	150,162	4,289	66,721
6	6,981,562	3,779,268	2,183,413	190,887	827,994	22.5	33.5	23.9	13.8	6.4	18,534,489	12,692,144	18,342,715	250,940	9,343	156,004	5,418	94,936
7	1,429,597	494,094	583,995	76,546	274,962	37.6	18.7	15.1	17.8	10.7	4,070,080	4,642,133	4,051,394	51,139	216	4,020	2,347	47,119
8	550,139	137,903	305,149	40,350	66,737	40.9	12.5	11.7	25.9	9.1	2,079,888	2,339,801	2,072,646	28,308	120	2,288	1,353	26,020
9	879,458	356,191	278,846	36,196	208,225	35.8	22.2	17.0	13.3	11.7	1,990,192	2,302,332	1,978,748	22,831	96	1,732	994	21,099
10	6,220,898	2,275,229	2,753,561	70,145	1,121,963	22.6	30.7	17.1	20.7	8.9	18,565,060	29,138,127	18,324,502	40,432	245	4,692	1,535	35,740
11	247,374	18,602	190,109	5,950	32,713	31.2	11.6	4.3	43.9	8.9	1,186,859	1,883,936	1,185,912	3,487	22	408	149	3,079
12	5,973,524	2,256,627	2,563,452	64,195	1,089,250	22.3	31.3	17.5	19.9	8.9	17,378,201	27,254,191	17,138,590	36,946	223	4,284	1,386	32,661
13	5,863,739	2,007,795	2,696,506	229,488	929,950	26.4	29.8	15.0	20.1	8.6	18,449,211	48,825,021	18,114,213	68,408	1,987	38,798	1,505	29,610
14	760,917	99,351	455,876	54,042	151,648	40.7	14.5	5.8	26.8	12.1	3,783,606	10,257,250	3,744,370	16,882	349	6,669	519	10,213
15	5,102,822	1,908,444	2,240,630	175,446	778,302	24.3	32.1	16.3	19.1	8.1	14,665,605	38,567,771	14,369,843	51,526	1,638	32,129	986	19,397
16	1,332,640	67,778	950,315	45,734	268,813	40.0	32.8	1.4	19.4	6.4	6,678,844	9,377,844	6,667,092	23,632	1,002	22,252	75	1,380
17	51,417	5,063	33,525	3,622	9,207	57.6	18.3	2.4	15.7	6.0	449,678	641,605	448,335	1,384	58	1,359	1	25
18	1,281,223	62,715	916,790	42,112	259,606	39.2	33.5	1.3	19.6	6.5	6,229,166	8,736,239	6,218,757	22,248	944	20,893	74	1,355
19	948,753	68,327	522,193	114,239	243,994	33.6	50.1	1.2	9.0	6.2	7,008,512	11,277,375	6,989,033	18,410	643	13,667	228	4,743
20	94,488	24,136	41,682	11,845	16,825	42.0	22.9	9.0	15.5	10.6	478,630	664,884	472,592	2,161	40	757	60	1,404
21	854,265	44,191	480,511	102,394	227,169	33.1	51.4	0.8	8.7	6.0	6,529,882	10,612,491	6,516,441	16,249	603	12,910	168	3,339
22	3,529,490	201,858	1,938,583	154,085	1,234,964	31.3	50.4	1.0	10.0	7.2	22,143,227	40,826,778	22,077,766	58,013	2,067	42,855	701	15,158
23	284,142	240	227,394	8,285	48,223	38.2	27.3	(2)	27.6	6.9	1,432,890	2,804,750	1,432,890	4,879	242	4,475	22	404
24	3,245,348	201,618	1,711,189	145,800	1,186,741	31.0	51.4	1.1	9.3	7.2	20,710,337	38,022,028	20,644,866	53,134	1,825	38,380	679	14,754
25	67,164	17,102	8,037	8,321	.33,704	36.5	46.0	4.5	2.1	11.0	329,127	316,837	324,470	2,777	122	2,670	8	107
26	6,012	2,861	1,143	735	1,273	44.2	16.5	18.7	7.5	13.1	28,992	21,037	24,685	562	22	542	1	20
27	61,152	14,241	6,894	7,586	32,431	36.1	47.3	3.9	1.9	10.9	300,135	295,800	299,785	2,215	100	2,128	7	87
28	4,478,243	270,185	2,460,776	268,324	1,478,958	31.9	50.3	1.1	9.8	7.0	29,151,739	52,104,153	29,066,789	76,423	2,710	56,522	929	19,901
29	378,630	24,376	269,076	20,130	65,048	39.1	26.2	2.2	24.6	7.8	1,911,520	3,469,634	1,905,482	7,040	282	5,232	82	1,808
30	4,099,613	245,809	2,191,700	248,194	1,413,910	31.5	51.4	1.0	9.1	6.9	27,240,219	48,634,519	27,161,307	69,383	2,428	51,290	847	18,093
31	50,671	2,951	7,695	8,140	31,885	40.2	44.3	0.9	2.4	12.2	313,168	305,030	308,611	2,472	112	2,397	4	75
32	5,371	2,501	1,132	590	1,148	39.9	12.2	22.3	10.1	15.5	21,762	16,087	17,455	432	18	432	....	....
33	45,300	450	6,563	7,550	30,737	40.2	45.4	0.1	2.1	12.1	291,406	288,943	291,156	2,040	94	1,965	4	75
34	6,220,898	2,275,229	2,753,561	70,145	1,121,963	22.6	30.7	17.1	20.7	8.9	18,565,060	29,138,127	18,324,502	40,432	245	4,692	1,535	35,740
35	247,374	18,602	190,109	5,950	32,713	31.2	11.6	4.3	43.9	8.9	1,186,859	1,883,936	1,185,912	3,487	22	408	149	3,079
36	5,973,524	2,256,627	2,563,452	64,195	1,089,250	22.3	31.3	17.5	19.9	8.9	17,378,201	27,254,191	17,138,590	36,945	223	4,284	1,386	32,661
37	591,662	138,694	232,382	34,182	186,404	44.5	20.7	8.2	13.7	13.0	1,723,231	2,050,515	1,715,572	21,818	93	1,874	857	19,944
38	151,134	16,085	97,690	11,868	25,491	53.0	13.4	3.6	21.7	8.3	695,980	808,627	692,840	8,785	53	1,090	356	7,695
39	440,528	122,609	134,692	22,314	160,913	41.4	23.3	9.8	10.8	14.7	1,027,251	1,241,888	1,022,732	13,033	40	784	501	12,249
40	90,172	27,830	46,319	7,761	8,262	48.5	10.5	12.7	21.1	7.3	376,370	958,354	374,482	3,897	19	491	172	3,406
41	62,487	14,952	35,916	6,325	5,294	51.4	9.6	9.3	22.4	7.3	299,763	759,597	297,965	3,263	18	437	144	2,826
42	27,685	12,878	10,403	1,436	2,968	40.6	12.9	21.6	17.5	7.4	76,607	198,757	76,517	634	1	54	28	580
43	149,172	75,231	48,299	5,174	20,468	32.6	29.7	19.0	12.2	6.5	412,444	533,886	409,130	3,007	56	994	131	2,013
44	29,005	7,831	15,687	2,731	2,756	46.9	20.5	8.8	17.7	6.2	137,046	177,868	135,486	1,421	19	375	69	1,046
45	120,167	67,400	32,612	2,443	17,712	28.5	32.4	21.9	10.6	6.6	275,398	356,018	273,644	1,586	37	619	62	967
46	662,615	47,290	492,421	9,582	113,322	37.3	29.3	2.4	24.8	6.2	1,978,939	2,889,919	1,976,007	4,985	206	4,790	10	195
47	14,601	1,163	5,926	2,546	4,966	69.4	15.9	1.2	5.9	7.5	214,017	316,501	212,854	475	18	450	1	25
48	648,014	46,127	486,495	7,036	108,356	35.6	30.0	2.4	25.8	6.1	1,764,922	2,573,418	1,763,153	4,510	188	4,340	9	170
49	549,068	318,163	149,073	37,585	44,247	20.1	28.5	29.8	14.0	7.7	1,896,515	1,155,648	1,881,796	40,983	1,750	25,071	1,120	15,912
50	219,662	94,467	83,725	23,348	18,122	22.5	12.5	28.0	24.8	12.3	1,101,839	674,407	1,093,687	24,054	893	12,885	810	11,169
51	329,406	223,696	65,348	14,237	26,125	19.1	35.9	30.6	8.9	5.5	794,676	481,241	788,109	16,929	857	12,186	310	4,743
52	4,118,549	1,792,558	1,555,369	122,338	648,284	26.7	26.9	20.2	17.6	8.7	11,211,318	9,144,943	11,127,608	135,505	3,234	61,941	3,835	73,564
53	613,156	176,039	338,791	39,329	58,997	34.1	14.5	14.8	28.4	8.2	2,441,051	2,196,924	2,435,790	36,285	641	11,433	1,409	24,852
54	3,505,393	1,616,519	1,216,578	83,009	589,287	25.6	28.8	21.1	15.8	8.8	8,770,267	6,948,019	8,691,718	99,220	2,593	50,508	2,426	48,712
55	5,298,340	1,925,093	2,284,443	215,556	873,248	25.4	30.5	16.0	19.0	9.1	16,558,208	45,671,724	16,233,865	60,359	1,812	34,910	1,288	25,449
56	668,089	77,813	399,578	45,423	145,275	39.8	14.5	5.3	27.3	13.0	3,299,496	9,187,356	3,262,058	12,893	320	6,000	345	6,893
57	4,630,251	1,847,280	1,884,865	170,133	727,973	23.4	32.8	17.5	17.8	8.5	13,258,712	36,484,368	12,971,807	47,466	1,492	28,910	943	18,556
58	3,179,679	1,735,854	1,005,041	131,898	306,886	23.6	29.9	25.4	14.7	6.4	10,775,586	6,528,101	10,623,825	266,206	13,000	191,755	4,729	74,451
59	977,505	274,948	505,986	61,014	135,557	32.1	22.6	12.7	23.4	9.1	5,309,648	3,231,396	5,265,179	156,024	7,836	114,265	2,613	41,759
60	2,202,174	1,460,906	499,055	70,884	171,329	19.7	33.2	31.2	10.7	5.2	5,465,938	3,296,705	5,358,646	110,182	5,164	77,490	2,116	32,692
61	1,145,252	75,360	823,638	42,323	203,931	39.2	32.6	1.9	20.2	6.1	6,214,538	8,682,868	6,196,951	22,799	952	20,859	110	1,940
62	67,157	10,486	47,981	3,370	5,320	42.2	22.4	5.5	25.3	4.6	420,008	635,401	419,828	1,635	51	1,141	30	494
63	1,078,095	64,874	775,657	38,953	198,611	39.1	33.1	1.7	20.0	6.1	5,794,530	8,047,467	5,777,123	21,164	901	19,718	80	1,446
64	1,485,463	682,231	649,822	50,975	102,435	23.0	37.6	18.1	17.2	4.1	5,357,770	3,406,333	5,345,859	51,443	1,355	28,551	1,382	22,892
65	222,111	37,902	135,848	16,779	31,582	38.8	14.7	7.9	28.5	10.1	1,166,619	735,728	1,159,245	18,622	607	12,402	385	6,220
66	1,263,352	644,329	513,974	34,196	70,853	20.7	40.9	19.6	15.6	3.2	4,191,151	2,670,605	4,186,614	32,821	748	16,149	997	16,672
67	16,493	14,151	342	181	1,819	14.7	56.0	25.1	0.6	3.5	15,959	11,807	15,859	305	10	273	4	32
68	641	360	11	145	125	56.2	28.3	8.7	0.3	6.5	7,230	4,950	7,230	130	4	110	1	20
69	15,852	13,791	331	36	1,694	11.4	58.2	26.4	0.6	3.3	8,729	6,857	8,629	175	6	163	3	12

---

[2] Less than one-tenth of 1 per cent.

[3] Includes operators distributed as follows: Michigan, 1; Missouri, 2; Wyoming, 5.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909.

Table 51

STATE AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.									
		Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.		
			Total.	Dry.			Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Total.	Men 16 years of age and over.	
								Total.	Number performing manual labor.					Engineers, firemen, mechanics, etc.	All other employees.
United States	1,207	18,271	2,654	613	981	13,690	4,022	3,061	82	418	643	1,277	8,391	2,202	[1] 6,189
Production only	797	3,258	......	......	235	3,310	2,115	1,862	52	131	122	313	882	120	762
Production and drilling of new wells	410	15,013	2,654	613	746	10,380	1,907	1,199	30	287	421	964	7,509	2,082	5,427
California	11	30	1	1	2	51	17	7	......	4	6	13	21	7	14
Illinois	12	103	42	10	22	73	15	8	......	2	5	14	44	25	19
Production only	4	12	......	......	6	7	3	3	......	......	......	......	4	3	1
Production and drilling of new wells	8	91	42	10	16	66	12	5	......	2	5	14	40	22	18
Indiana	457	2,252	213	61	264	2,551	2,232	2,039	4	121	72	62	257	108	149
Production only	408	1,298	......	......	107	1,414	1,310	1,210	3	60	40	27	77	25	52
Production and drilling of new wells	49	954	213	61	157	1,137	922	829	1	61	32	35	180	83	97
Kansas	99	2,028	563	181	251	1,453	142	51	5	30	61	132	1,179	298	881
Production only	41	511	......	......	59	87	45	22	2	11	12	11	31	25	6
Production and drilling of new wells	58	1,517	563	181	192	1,366	97	29	3	19	49	121	1,148	273	875
Kentucky	15	157	24	5	......	82	24	14	1	4	6	11	47	10	37
Production only	11	76	......	......	......	22	15	13	......	......	2	3	4	......	4
Production and drilling of new wells	4	81	24	5	......	60	9	1	1	4	4	8	43	10	33
Louisiana	6	45	13	3	......	41	9	1	......	4	4	11	21	7	14
New York	75	644	71	13	9	265	129	68	3	31	30	42	94	31	63
Production only	47	201	......	......	3	73	53	36	2	8	9	10	10	7	3
Production and drilling of new wells	28	443	71	13	6	192	76	32	1	23	21	32	84	24	60
Ohio	124	3,380	581	126	151	3,591	333	135	19	69	129	453	2,805	487	[1] 2,318
Production only	69	221	......	......	28	1,047	137	87	15	27	23	232	678	13	665
Production and drilling of new wells	55	3,159	581	126	123	2,544	196	48	4	42	106	221	2,127	474	1,653
Oklahoma	40	168	53	20	11	166	55	12	......	24	19	31	80	46	34
Production only	14	24	......	......	1	24	13	3	......	6	4	4	7	6	1
Production and drilling of new wells	26	144	53	20	10	142	42	9	......	18	15	27	73	40	33
Pennsylvania	277	8,798	872	152	262	4,840	914	645	48	109	160	377	3,549	1,087	[1] 2,462
Production only	151	771	......	......	27	515	456	427	29	13	16	17	42	36	6
Production and drilling of new wells	126	8,027	872	152	235	4,325	458	218	19	96	144	360	3,507	1,051	2,456
West Virginia	66	392	139	16	4	497	123	68	1	14	41	117	257	78	179
Production only	28	75	......	......	1	88	58	44	1	3	11	4	26	2	24
Production and drilling of new wells	38	317	139	16	3	409	65	24	......	11	30	113	231	76	155
All other states[2]	25	274	82	25	5	80	29	13	1	6	10	14	37	18	19
Production only	13	46	......	......	1	21	14	10	......	2	2	4	3	3	......
Production and drilling of new wells	12	228	82	25	4	59	15	3	1	4	8	10	34	15	19

---

[1] Includes 3 boys under 16 years of age, distributed as followa: Ohio, 2; Pennsylvania, 1.

[2] Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909—Continued.

Table 51—Continued.

STATE AND CHARACTER OF OPERATIONS.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.								
		Aggregate.	Services.				Supplies, fuel, and rent of power.			
			Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Total.	Supplies and materials.	Fuel and rent of power.	Cost of purchased gas.
United States	$243,097,379	$32,326,067	$6,057,968	$1,319,470	$1,004,008	$3,734,490	$14,261,414	$6,334,762	$152,877	$7,773,676
Production only	28,597,213	6,102,302	899,234	214,733	280,265	404,236	4,497,337	236,375	12,544	4,248,418
Production and drilling of new wells	214,500,166	26,223,765	5,158,734	1,104,737	723,743	3,330,254	9,764,077	6,098,387	140,433	3,525,257
California	886,696	110,068	38,731	13,040	6,360	19,331	36,981	31,090	2,575	3,316
Illinois	684,066	153,375	49,503	12,140	12,123	25,240	38,334	25,187	434	12,713
Production only	11,066	974	765	...	...	765	34	...	34	...
Production and drilling of new wells	673,000	152,401	48,738	12,140	12,123	24,475	38,300	25,187	400	12,713
Indiana	12,330,907	783,769	295,456	111,413	38,502	145,541	142,433	66,363	53,475	22,595
Production only	2,064,991	208,033	90,845	34,651	10,547	45,647	34,014	16,220	3,304	14,490
Production and drilling of new wells	10,265,916	575,736	204,611	76,762	27,955	99,894	108,419	50,143	50,171	8,105
Kansas	32,903,112	3,798,717	713,407	160,980	121,263	431,164	1,099,605	827,364	2,696	269,545
Production only	890,687	148,429	50,842	23,444	6,466	20,932	44,822	8,433	815	35,574
Production and drilling of new wells	32,012,425	3,650,288	662,565	137,536	114,797	410,232	1,054,783	818,931	1,881	233,971
Kentucky	3,628,379	181,408	48,914	13,349	9,041	26,524	60,228	59,982	246	...
Production only	1,530,745	57,869	5,263	1,883	500	2,880	20,359	20,334	25	...
Production and drilling of new wells	2,097,634	123,539	43,651	11,466	8,541	23,644	39,869	39,648	221	...
Louisiana	5,202,538	149,111	53,657	21,956	8,125	23,576	58,824	51,183	441	7,200
New York	3,166,460	490,360	109,757	46,104	20,591	43,062	190,717	122,772	2,289	65,656
Production only	568,105	41,704	15,074	7,235	2,782	5,057	7,394	4,144	...	3,250
Production and drilling of new wells	2,598,355	448,656	94,683	38,869	17,809	38,005	183,323	118,628	2,289	62,406
Ohio	61,412,777	12,363,508	1,768,836	304,911	388,465	1,075,460	7,141,569	1,740,679	25,103	5,375,787
Production only	18,601,512	5,166,232	560,035	76,618	247,788	235,629	4,283,091	146,122	7,903	4,129,066
Production and drilling of new wells	42,811,265	7,197,276	1,208,801	228,293	140,677	839,831	2,858,478	1,594,557	17,200	1,246,721
Oklahoma	5,222,246	927,634	150,297	54,184	21,244	74,869	411,358	283,290	221	127,847
Production only	292,431	32,640	12,094	6,525	2,380	3,189	4,864	3,721	...	1,143
Production and drilling of new wells	4,929,815	894,994	138,203	47,659	18,864	71,680	406,494	279,569	221	126,704
Pennsylvania	108,511,275	10,551,381	2,288,882	443,857	325,172	1,519,853	4,183,764	2,313,399	60,023	1,810,342
Production only	2,905,936	186,955	52,788	21,193	6,291	25,304	53,107	18,588	453	34,066
Production and drilling of new wells	105,605,339	10,364,426	2,236,094	422,664	318,881	1,494,549	4,130,657	2,294,811	59,570	1,776,276
West Virginia	7,461,986	2,277,343	493,158	119,266	44,266	329,626	630,039	583,566	3,112	43,361
Production only	1,033,187	219,036	98,523	33,684	1,080	63,759	36,257	5,589	...	30,668
Production and drilling of new wells	6,428,799	2,058,307	394,635	85,582	43,186	265,867	593,782	577,977	3,112	12,693
All other states [1]	1,686,937	539,393	47,370	18,270	8,856	20,244	267,562	229,887	2,362	35,313
Production only	375,150	28,952	8,285	5,900	1,311	1,074	11,275	11,265	10	...
Production and drilling of new wells	1,311,787	510,441	39,085	12,370	7,545	19,170	256,287	218,622	2,352	35,313

---

[1] Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909—Continued.

Table 51—Continued.	EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.			PRIMARY POWER OWNED.				
	Miscellaneous.					Per cent of total.						Natural gas.[1]			Steam engines.		Gas or gasoline engines.	
STATE AND CHARACTER OF OPERATIONS.	Total (dolls.).	Contract work including compensation to part-time employees (dolls.).	Royalties and rent of wells (dolls.).	Taxes (dolls.).	Rent of offices and other sundry expenses (dolls.).	Services.	Supplies.	Contract work.	Royalties and rent of wells.	Other miscellaneous.	Total value [1] (dolls.).	M cubic feet.	Value at well (dolls.).	Total horse power.	Number.	Horsepower.	Number.	Horsepower.
United States	12,006,685	3,666,924	4,450,321	1,062,643	2,826,787	18.7	44.1	11.3	13.8	12.0	53,574,936	394,775,787	52,674,560	151,233	606	61,321	1,498	89,812
Production only	705,731	46,545	210,410	261,894	186,882	14.7	73.7	0.8	3.4	7.4	10,087,327	61,701,004	9,998,180	9,916	85	3,493	132	6,423
Production and drilling of new wells	11,300,954	3,620,379	4,239,911	800,749	2,639,915	19.7	37.2	13.8	16.2	13.2	43,487,609	333,074,783	42,676,380	141,317	521	57,828	1,366	83,489
California	34,356	2,448	207	8,345	23,356	35.2	33.6	2.2	0.2	28.8	158,596	189,956	158,596	136	2	116	1	20
Illinois	65,538	27,422	22,507	1,962	13,647	32.3	25.0	17.9	14.7	10.2	330,755	2,572,355	325,620	183	2	28	6	155
Production only	175	...	150	...	25	78.5	3.5	...	15.4	2.6	2,733	1,776	2,632	28	2	28	...	...
Production and drilling of new wells	65,363	27,422	22,357	1,962	13,622	32.0	25.1	18.0	14.7	10.2	328,022	2,570,579	322,988	155	...	...	6	155
Indiana	345,880	137,328	87,451	39,180	81,921	37.7	18.2	17.5	11.2	15.5	1,501,388	5,173,799	1,472,457	6,341	54	4,071	59	2,270
Production only	83,174	11,253	29,370	14,572	27,979	43.7	16.4	5.4	14.1	20.5	515,580	2,057,324	511,808	1,942	9	710	23	1,232
Production and drilling of new wells	262,706	126,075	58,081	24,608	53,942	35.5	18.8	21.9	10.1	13.6	985,808	3,116,475	960,649	4,399	45	3,361	36	1,038
Kansas	1,985,705	265,230	1,168,951	114,469	437,055	18.8	28.9	7.0	30.8	14.5	6,305,410	69,609,762	6,217,380	32,544	22	5,853	92	26,691
Production only	52,765	3,377	29,285	3,392	16,711	34.3	30.2	2.3	19.7	13.5	313,364	5,697,832	262,003	459	9	154	12	305
Production and drilling of new wells	1,932,940	261,853	1,139,666	111,077	420,344	18.2	28.9	7.2	31.2	14.6	5,992,046	63,911,930	5,955,377	32,085	13	5,699	80	26,386
Kentucky	72,266	21,283	20,618	17,314	13,051	27.0	33.2	11.7	11.4	16.7	479,837	2,100,325	478,685	1,344	3	55	22	1,289
Production only	32,247	5,810	12,927	7,854	5,656	9.1	35.2	10.0	22.3	23.3	233,310	1,171,811	232,158	91	1	25	7	66
Production and drilling of new wells	40,019	15,473	7,691	9,460	7,395	35.3	32.3	12.5	6.2	13.6	246,527	928,514	246,527	1,253	2	30	15	1,223
Louisiana	36,630	15,150	3,777	4,330	13,373	36.0	39.4	10.2	2.5	11.9	199,047	662,121	199,047	360	12	360	...	...
New York	189,886	87,021	46,729	27,072	29,064	22.4	38.9	17.7	9.5	11.4	772,481	3,020,316	766,647	814	11	307	53	507
Production only	19,236	3,527	8,891	3,780	3,038	36.1	17.7	8.5	21.3	16.3	79,938	314,785	79,938	203	...	...	6	203
Production and drilling of new wells	170,650	83,494	37,838	23,292	26,026	21.1	40.9	18.6	8.4	11.0	692,543	2,705,531	686,709	611	11	307	47	304
Ohio	3,453,103	1,086,757	1,118,981	463,204	784,161	14.3	57.8	8.8	9.1	10.1	18,409,641	96,870,533	18,216,751	31,522	73	8,149	127	23,373
Production only	323,106	6,673	22,878	215,303	78,252	10.8	82.9	0.1	0.4	5.7	7,377,062	31,326,394	7,357,439	5,427	14	1,520	22	3,907
Production and drilling of new wells	3,129,997	1,080,084	1,096,103	247,901	705,909	16.8	39.7	15.0	15.2	13.3	11,032,579	65,544,139	10,859,312	26,095	59	6,629	105	19,466
Oklahoma	365,979	178,180	46,755	46,075	94,969	16.2	44.3	19.2	5.0	15.2	1,126,884	18,745,834	1,126,884	137	6	112	1	25
Production only	15,682	966	4,182	3,315	7,219	37.1	14.9	3.0	12.8	32.3	53,864	732,496	53,864	20	1	20	...	...
Production and drilling of new wells	350,297	177,214	42,573	42,760	87,750	15.4	45.4	19.8	4.8	14.6	1,073,020	18,013,338	1,073,020	117	5	92	1	25
Pennsylvania	4,078,735	1,316,357	1,432,626	313,807	1,015,945	21.7	39.6	12.5	13.6	12.6	21,500,830	156,409,783	20,973,237	76,374	399	41,572	1,117	34,802
Production only	81,060	9,770	42,807	4,793	23,690	28.2	28.4	5.2	22.9	15.2	536,722	5,592,753	524,784	1,503	45	821	59	682
Production and drilling of new wells	3,997,675	1,306,587	1,389,819	309,014	992,255	21.6	39.9	12.6	13.4	12.6	20,964,108	150,817,030	20,448,453	74,871	354	40,751	1,058	34,120
West Virginia	1,154,146	384,883	445,061	23,272	300,930	21.7	27.7	16.9	19.5	14.2	2,460,473	36,589,513	2,459,251	989	17	473	4	516
Production only	84,256	1,611	56,987	7,599	18,059	45.0	16.6	0.7	26.0	11.7	892,686	14,069,425	892,686	55	2	55	...	...
Production and drilling of new wells	1,069,890	383,272	388,074	15,673	282,871	19.2	28.8	18.6	18.9	14.6	1,567,787	22,520,088	1,566,565	934	15	418	4	516
All other states[2]	224,461	144,865	56,658	3,613	19,325	8.8	49.6	26.9	10.5	4.3	329,594	2,831,490	280,005	489	5	225	16	264
Production only	9,392	960	2,446	500	5,486	28.6	38.9	3.3	8.4	20.7	54,579	667,856	53,379	168	2	160	2	8
Production and drilling of new wells	215,069	143,905	54,212	3,113	13,839	7.7	50.2	28.2	10.6	3.3	275,015	2,163,634	226,626	321	3	65	14	256

---

[1] Includes duplications resulting from the purchase of natural gas by operators of gas wells.

[2] Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

DETAILED STATISTICS OF NONPRODUCING ENTERPRISES, BY STATES: 1909.

Table 52

STATE.	Number of operators.	Number of completed wells Dec. 31, 1909.	Capital.	GROSS ACREAGE.			PERSONS ENGAGED IN INDUSTRY.									
				Total.	Owned.	Held under lease.	Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.		
								Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Total.	Men 16 years of age and over.	
									Total.	Number performing manual labor.					Engineers, firemen, mechanics, etc.	All other employees.
United States	260	128	$14,166,314	1,115,527	76,008	1,039,519	1,917	396	207	19	67	122	70	1,451	1,022	[1] 429
Alabama	3	6	49,500	11,202	2	11,200	33	3	1		1	1		30	30	
California	168	24	11,904,813	103,707	51,750	51,957	1,411	198	46	16	51	101	61	1,152	837	315
Illinois	4	7	65,000	9,100		9,100	14	11	10			1		3	3	
Indiana	3		25,412	1,298		1,298	2	1	1					1	1	
Ohio	7	15	89,850	4,876	465	4,411	10	7	5		1	1		3	3	
Oklahoma	11	22	147,753	20,052	160	19,892	44	12	9		1	2	2	30	25	5
Pennsylvania	14	17	34,757	3,269	110	3,159	96	95	95	2				1	1	
Texas	19	2	409,200	47,132	9,071	38,061	143	30	21	1	2	7	1	112	36	76
Utah	4	4	69,000	2,020	1,600	420	16						1	15	15	
West Virginia	8	10	101,796	14,971		14,971	19	13	9		2	2		6	2	4
Wyoming	7	17	710,560	161,260	4,800	156,460	37	11	1		6	4	1	25	18	7
All other states [2]	12	4	558,673	736,640	8,050	728,590	92	15	9		3	3	4	73	51	[1] 22

STATE.	EXPENSES OF OPERATION AND DEVELOPMENT.															
	Aggregate.	Services.				Supplies, fuel, and rent of power.			Miscellaneous.					Per cent of total.		
		Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Total.	Supplies.	Fuel and rent of power.	Total.	Contract work.	Royalties and rent of wells.	Taxes.	Rent of offices and other sundry expenses.	Services.	Supplies.	Miscellaneous.
United States	$7,044,383	$1,219,081	$191,155	$25,643	$1,002,383	$5,136,316	$4,937,764	$198,552	$688,986	$303,162	$64,680	$26,203	$294,941	17.3	72.9	9.8
Alabama	35,301	11,850	2,050		9,800	17,035	16,685	350	6,416	6,400		16		33.6	48.3	18.1
California	6,244,528	1,001,687	134,557	22,423	844,707	4,828,208	4,659,533	168,675	414,633	127,044	27,989	24,088	235,512	16.0	77.3	6.6
Illinois	25,894	1,324	360		964	16,835	16,643	192	7,735	6,700		37	998	5.1	65.0	29.9
Indiana	14,166					5,834	5,436	398	8,332	6,410	1,467	35	420		41.2	58.8
Ohio	64,610	691	240		451	18,557	18,514	43	45,362	34,023	9,383	105	1,851	1.1	28.7	70.2
Oklahoma	77,431	11,512	1,250	100	10,162	32,446	31,728	718	33,473	28,403	2,525	254	2,291	14.9	41.9	43.2
Pennsylvania	34,990	45			45	14,327	14,259	68	20,618	19,192	933		493	0.1	40.9	58.9
Texas	130,575	52,538	5,465	300	46,773	66,002	46,572	19,430	12,035	2,600		245	9,190	40.2	50.5	9.2
Utah	47,259	16,944		180	16,764	21,065	17,650	3,415	9,250	8,575		225	450	35.9	44.6	19.6
West Virginia	82,752	2,934	1,705		1,229	24,924	24,909	15	54,894	46,638	7,656	100	500	3.5	30.1	66.3
Wyoming	68,002	43,045	31,105	480	11,460	13,847	11,944	1,903	11,110	5,000	500	660	4,950	63.3	20.4	16.3
All other states [2]	218,875	76,511	14,423	2,060	60,028	77,236	73,891	3,345	65,128	12,177	14,227	438	38,286	35.0	35.3	29.8

STATE.	NUMBER OF WAGE EARNERS EMPLOYED ON THE 15TH DAY OF—												PRIMARY POWER OWNED.				
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total horsepower.	Steam engines.		Gas or gasoline engines.	
														Number.	Horsepower.	Number.	Horsepower.
United States	552	603	682	746	766	838	894	905	925	1,035	1,167	1,208	8,577	303	8,062	32	515
Alabama	6	6	6	6		6	6	6		24	24	24	180	6	180		
California	445	477	542	571	609	628	671	721	772	860	970	1,025	6,517	238	6,322	10	195
Illinois							1	1	2	3	3	3	87			4	87
Indiana	1	1	1	6	1	1	1	1	1	1	1	1	65	1	40	1	25
Ohio				2	2	1	1	1			3	3	50	2	30	1	20
Oklahoma	3	3	7	7	7	11	11	16	16	15	32	30	120	6	120		
Pennsylvania												1	71	3	50	3	21
Texas	44	52	52	53	49	63	59	47	47	53	58	62	615	21	533	8	82
Utah	16	14	21	21	11	13	15	7	7	6	7	3	97	4	97		
West Virginia							12	5	9	9	5	5	75	2	50	1	25
Wyoming	5	6	6	20	23	24	20	12	12	11	3	4	179	6	179		
All other states [2]	32	44	47	60	64	91	97	88	59	53	61	47	521	14	461	4	60

[1] Includes 4 boys under 16 years of age.

[2] Includes operators as follows: Arizona, 1; Arkansas, 1; Colorado, 2; Kentucky, 2; Louisiana, 2; Montana, 1; New York, 2; Oregon, 1.

GENERAL TABLES

TABLE 1.—PRODUCING MINES, QUARRIES, AND WELLS[1]—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY INDUSTRIES: 1909 AND 1902.

INDUSTRY.	Census.	PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT.				Value of products.[2]	Primary horsepower.	PER CENT OF INCREASE.[4]			
		Salaries and wages.	Supplies, materials, and fuel.[2]	Royalties and rent of mines.	Contract work.[3]			Salaries and wages.	Royalties and rent of mines.	Value of products.	Horsepower.
All industries[5]	1909	$625,610,068	$208,771,046	$62,466,760	$24,091,986	$1,176,475,001	4,666,170	56.9	81.2	52.4	71.0
	1902	401,225,547	114,515,832	34,476,227	20,638,127	771,486,926	2,663,964	....	....	....	....
FUELS:											
Coal, total	1909	399,697,241	72,043,898	20,016,639	3,893,257	550,513,866	1,904,154	68.3	69.6	50.2	109.4
	1902	237,557,596	37,517,821	11,799,559	1,650,535	366,642,015	909,160	....	....	....	....
Anthracite	1909	96,900,963	26,697,966	7,980,739	1,701,514	149,180,471	676,753	132.8	83.1	95.8	62.7
	1902	41,623,406	12,740,780	4,369,051	406,421	76,173,586	416,012	....	....	....	....
Bituminous	1909	302,796,278	45,345,932	12,035,900	2,191,743	401,333,395	1,227,401	54.5	61.8	38.2	148.9
	1902	195,934,190	24,777,041	7,440,508	1,244,114	290,468,429	493,148	....	....	....	....
Petroleum and natural gas	1909	34,333,531	41,391,608	21,282,820	15,700,864	175,527,807	1,221,969	63.8	85.7	72.0	21.1
	1902	20,962,116	24,320,573	11,463,786	17,389,696	102,034,590	1,008,710	....	....	....	....
METALS:											
Iron	1909	33,121,418	17,229,717	15,174,735	2,698,842	106,947,082	346,534	40.1	133.3	63.4	233.3
	1902	23,641,599	8,973,168	6,503,908	422,044	65,460,985	103,974	....	....	....	....
Copper	1909	45,060,017	23,104,451	259,245	406,999	99,493,799	297,769	96.6	99.1	94.4	54.1
	1902	22,919,861	11,083,175	130,215	188,768	51,178,036	193,272	....	....	....	....
Precious metals, total	1909	37,766,098	22,075,916	1,305,701	318,303	87,671,553	228,244	−8.2	−8.3	6.3	23.5
	1902	41,154,265	16,699,768	1,423,399	626,090	82,482,052	184,819	....	....	....	....
Deep mines	1909	34,665,761	19,205,870	1,163,985	225,147	77,434,301	200,966	−11.1	−8.9	0.4	15.5
	1902	39,011,089	15,908,782	1,277,632	606,137	77,154,326	173,961	....	....	....	....
Placer mines	1909	3,100,347	2,870,046	141,716	93,156	10,237,252	27,278	44.7	−2.8	92.2	151.2
	1902	2,143,176	790,986	145,767	19,953	5,327,726	10,858	....	....	....	....
Lead and zinc	1909	11,190,925	6,895,892	2,301,850	166,985	28,568,547	109,644	117.1	50.9	95.7	178.2
	1902	5,155,598	2,511,657	1,525,368	108,607	14,600,177	39,374	....	....	....	....
Quicksilver	1909	486,125	185,378	5,268	4,197	868,458	784	−53.1	−25.6	−44.0	−55.1
	1902	1,035,494	322,267	7,078	23,164	1,550,090	1,748	....	....	....	....
Manganese	1909	17,088	3,959	....	....	20,435	175	−79.7	....	−88.5	−50.6
	1902	84,319	17,228	1,996	....	177,911	354	....	....	....	....
Tungsten	1909	211,486	94,203	1,375	2,400	563,457	486	16,684.6	....	9,330.2	120.9
	1902	1,260	210	....	....	5,975	220	....	....	....	....
STRUCTURAL MATERIALS:											
Limestone	1909	22,860,012	11,992,659	549,096	254,312	47,784,479	152,651	38.6	29.9	57.8	141.6
	1902	16,496,501	5,378,932	422,693	36,381	30,278,877	63,182	....	....	....	....
Granite and traprock	1909	15,067,785	3,976,162	476,850	123,808	24,576,293	90,306	23.8	144.7	36.2	94.5
	1902	12,168,784	2,447,761	194,892	....	18,042,943	46,441	....	....	....	....
Sandstone	1909	5,352,818	1,389,149	154,513	44,340	9,290,829	36,556	−23.7	−24.4	−15.2	32.6
	1902	7,011,437	1,328,466	204,517	600	10,954,634	27,575	....	....	....	....
Marble	1909	3,462,130	806,016	47,911	27,344	6,239,120	21,779	35.6	−26.7	23.7	53.8
	1902	2,553,661	825,822	65,385	....	5,044,182	14,161	....	....	....	....
Slate	1909	4,494,132	849,158	271,252	28,962	6,054,174	29,777	28.0	0.7	6.3	17.8
	1902	3,512,338	680,361	269,267	....	5,696,051	25,269	....	....	....	....
MISCELLANEOUS:											
Asbestos	1909	41,329	23,520	45	400	65,140	380	279.9	....	41.0	261.9
	1902	10,878	8,233	....	....	46,200	105	....	....	....	....
Asphaltum and bituminous rock	1909	173,106	79,757	1,517	15,546	466,461	828	35.4	−46.9	97.0	15.0
	1902	127,803	21,928	2,856	10,060	236,728	720	....	....	....	....
Barytes	1909	110,493	28,224	14,232	3,576	224,766	262	−24.0	−47.9	10.6	138.2
	1902	145,444	7,772	27,300	1,000	203,154	110	....	....	....	....
Bauxite	1909	230,759	55,289	6,909	....	670,829	1,565	148.1	230.6	423.2	150.8
	1902	92,993	40,019	2,090	500	128,206	624	....	....	....	....
Buhrstones and millstones	1909	16,850	508	271	....	34,441	....	−61.9	−57.4	−42.4	....
	1902	44,244	1,809	636	....	59,808	....	....	....	....	....
Clay	1909	1,586,509	389,342	85,403	44,318	2,945,948	8,868	43.0	43.8	42.9	122.5
	1902	1,109,397	272,823	59,387	13,241	2,061,072	3,985	....	....	....	....
Corundum and emery	1909	4,719	250	708	....	18,185	....	−87.8	−35.1	−82.6	....
	1902	38,831	26,114	1,091	....	104,605	110	....	....	....	....
Feldspar	1909	135,356	56,744	9,238	8,681	271,437	993	6.1	−12.7	8.4	−17.5
	1902	127,539	50,278	10,584	....	250,424	1,204	....	....	....	....
Fluorspar	1909	193,118	59,109	1,917	949	288,509	1,179	40.6	−75.7	4.7	76.2
	1902	137,313	31,374	7,900	300	275,682	669	....	....	....	....
Fuller's earth	1909	156,979	83,807	582	67	315,762	1,739	258.6	....	221.7	278.0
	1902	43,775	28,966	....	4,021	98,144	460	....	....	....	....
Garnet	1909	44,654	25,286	6,850	....	101,920	315	−35.1	410.8	−23.3	−25.0
	1902	68,810	10,128	1,341	....	132,820	420	....	....	....	....
Graphite	1909	186,083	105,523	5,765	4,000	344,130	2,647	94.5	1,008.7	51.3	244.2
	1902	95,653	51,840	520	900	227,508	769	....	....	....	....
Grindstones and pulpstones	1909	174,268	114,032	3,348	25,597	413,296	1,648	54.7	67.1	−38.1	33.4
	1902	112,640	31,349	2,003	....	667,431	1,235	....	....	....	....
Gypsum	1909	2,372,766	1,560,117	74,916	16,558	5,812,810	17,685	123.9	50.1	178.2	141.6
	1902	1,059,678	341,760	49,912	406	2,089.341	7,319	....	....	....	....
Infusorial earth, tripoli, and pumice	1909	67,102	23,619	3,587	2,430	172,157	581	279.2	241.6	207.5	41.7
	1902	17,698	2,297	1,050	....	55,994	410	....	....	....	....
Marl	1909	13,512	2,988	....	....	13,307	105	96.7	....	4.4	110.0
	1902	6,869	2,755	....	....	12,741	50	....	....	....	....
Mica	1909	139,188	22,769	5,684	....	206,794	463	142.1	80.9	74.0	150.3
	1902	57,487	11,961	3,142	....	118,849	185	....	....	....	....
Mineral pigments	1909	60,856	22,485	3,469	15,288	151,015	849	−61.9	−74.0	−58.2	−52.6
	1902	159,680	58,073	13,326	....	360,885	1,790	....	....	....	....
Oilstones, scythestones, and whetstones	1909	74,967	11,558	1,061	6,622	206,028	448	74.0	123.4	80.8	132.1
	1902	43,077	7,662	475	....	113,968	193	....	....	....	....
Phosphate rock	1909	3,806,651	2,259.025	345,568	251,849	10,781,192	50,526	66.6	62.7	119.0	257.2
	1902	2,285,297	799,414	212,350	157,402	4,922,943	14,144	....	....	....	....
Precious stones	1909	134,841	31,461	....	....	315,464	109	15.5	....	−4.0	−27.3
	1902	116,704	17,781	437	....	328,450	150	....	....	....	....
Quartz	1909	94,774	29,526	2,959	16,351	231,025	1,219	16.4	−61.3	23.3	60.4
	1902	81,406	19,592	7,638	....	187,294	760	....	....	....	....
Sulphur and pyrite	1909	898,208	1,180,447	887	3,091	5,109,050	8,872	100.2	−87.4	439.4	49.5
	1902	448,760	217,262	7,048	3,587	947,089	5,935	....	....	....	....
Talc and soapstone	1909	607,128	262,393	31,287	3,550	1,174,516	9,433	77.1	−0.2	3.2	139.1
	1902	342,796	125,932	31,364	....	1,138,167	3,945	....	....	....	....

---

[1] Exclusive of governmental institutions and of the coke and cement industries, but including figures for the lime industry.

[2] Exclusive of duplications resulting from the use of the products of some enterprises as materials for others within the same industry.

[3] Exclusive of the amount paid to miners compensated by a share of the product for both years, and also of the wages of part-time employees for the petroleum and natural gas industry for 1909, which are included under "Contract work" in other tables for 1909.

[4] A minus sign (—) denotes decrease.

[5] The totals for all industries include, besides those specified, a few industries which could not be separately shown without disclosing the operations of individual operators. The value of products of those industries was less than 0.1 per cent of the total for all industries in 1909 and 0.3 per cent in 1902.

TABLE 2.—PRODUCING MINES, QUARRIES, AND WELLS[1]—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY STATES: 1909 AND 1902.

GEOGRAPHIC DIVISION AND STATE.	Census.	PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT.				Value of products.[2]	Primary horse-power.	PER CENT OF INCREASE.[3]			
		Salaries and wages.	Supplies, materials, and fuel.[2]	Royalties and rent of mines.	Contract work.			Salaries and wages.	Royalties and rent of mines.	Value of products.	Horse-power.
United States[4]	1909	[5]$625,610,068	$208,771,046	$62,456,760	$24,091,986	$1,175,475,001	4,556,170	55.9	81.2	52.4	71.0
	1902	401,225,547	114,515,832	34,476,227	20,838,127	771,488,928	2,663,964				
GEOGRAPHIC DIVISIONS:											
New England	1909	11,093,136	3,903,951	190,947	120,440	19,312,271	60,120	5.8	6.8	16.3	37.7
	1902	10,484,388	2,638,713	178,812	1,853	16,608,696	43,670				
Middle Atlantic	1909	212,534,186	54,917,283	15,928,491	6,048,025	353,775,070	1,748,375	66.2	42.3	47.2	46.7
	1902	127,847,369	31,582,205	11,190,610	5,959,507	240,365,682	1,191,487				
East North Central	1909	129,342,721	34,944,431	12,338,469	5,882,397	233,002,528	919,427	44.9	36.7	34.8	50.8
	1902	89,261,566	25,966,245	9,024,556	4,959,358	172,894,450	609,641				
West North Central	1909	55,134,454	21,116,725	14,720,084	2,709,833	129,023,910	371,548	62.2	158.6	78.6	208.5
	1902	33,998,514	9,936,373	5,691,636	770,773	72,257,703	120,421				
South Atlantic	1909	53,154,421	18,226,801	8,638,145	4,665,497	102,375,877	532,824	66.5	90.1	47.9	81.9
	1902	31,916,461	11,496,991	4,544,772	5,374,382	69,202,161	292,981				
East South Central	1909	31,848,088	6,843,506	1,374,027	976,571	46,394,609	180,503	41.2	79.5	33.2	210.6
	1902	22,559,863	3,941,987	765,974	661,402	34,820,772	58,122				
West South Central	1909	9,221,489	4,368,820	1,608,985	303,062	22,400,222	55,199	85.3	348.7	127.2	152.4
	1902	4,976,130	1,216,670	358,555	1,491,266	9,857,364	21,873				
Mountain	1909	82,758,040	36,741,950	1,880,957	728,712	170,306,955	399,398	45.1	18.0	51.7	80.9
	1902	57,029,455	20,390,291	1,593,738	770,931	112,270,912	220,774				
Pacific	1909	28,627,961	21,956,212	2,973,092	523,657	71,076,741	184,172	57.9	270.2	96.9	116.2
	1902	18,128,437	6,557,854	803,039	570,016	36,092,355	85,203				
NEW ENGLAND:											
Maine	1909	1,696,617	1,032,965	22,279	14,448	3,270,766	8,345	−31.5	75.2	−10.5	20.3
	1902	2,478,603	476,964	12,714		3,656,134	6,939				
New Hampshire	1909	979,840	155,358	4,271	9,246	1,308,597	3,771	11.9	80.1	11.2	44.1
	1902	875,465	134,128	2,372		1,176,312	2,617				
Vermont	1909	4,899,736	1,386,827	85,632	64,988	8,471,725	25,916	40.4	−15.7	43.5	73.0
	1902	3,490,476	1,076,143	101,546		5,904,705	14,979				
Massachusetts	1909	2,516,534	854,090	58,589	18,637	4,332,218	15,620	−8.1	32.2	−3.7	39.8
	1902	2,739,230	727,665	44,325	1,853	4,499,401	11,170				
Connecticut	1909	1,000,409	474,711	20,176	13,121	1,928,965	6,468	11.1	13.0	40.6	−18.8
	1902	900,614	223,813	17,855		1,372,144	7,965				
MIDDLE ATLANTIC:											
New York	1909	5,893,286	2,647,861	468,646	374,435	13,849,494	102,540	26.0	31.0	43.0	60.3
	1902	4,517,851	1,627,489	357,637	350,663	9,682,457	63,953				
New Jersey	1909	3,155,929	1,067,226	101,523	40,799	8,548,858	18,390	38.6	−7.8	111.5	41.4
	1902	2,277,652	892,030	110,163	10,770	4,042,047	13,008				
Pennsylvania	1909	203,684,971	51,202,196	15,358,322	5,632,791	331,376,718	1,627,445	68.3	43.2	46.2	46.0
	1902	121,051,866	29,062,686	10,722,810	5,598,074	226,641,178	1,114,526				
EAST NORTH CENTRAL:											
Ohio	1909	30,226,878	8,850,679	3,668,862	2,745,089	59,931,837	298,635	18.6	−12.4	6.4	46.1
	1902	25,479,977	9,836,370	4,190,544	2,692,557	56,340,184	204,341				
Indiana	1909	16,092,359	2,557,423	595,475	265,259	22,324,647	95,929	36.1	−67.1	−17.0	−20.4
	1902	11,819,897	3,389,898	1,807,948	2,159,980	26,896,393	120,511				
Illinois	1909	49,838,660	9,973,037	3,579,960	2,360,424	77,214,343	226,124	74.6	654.5	106.6	155.5
	1902	28,539,154	3,315,552	474,475	26,016	37,377,226	88,500				
Michigan	1909	29,344,947	11,898,749	4,048,981	472,605	64,956,299	271,891	37.9	75.2	35.3	47.5
	1902	21,277,047	8,637,172	2,311,479	77,047	48,022,962	184,278				
Wisconsin	1909	3,839,877	1,664,543	445,191	39,020	8,575,402	26,848	79.0	85.4	101.4	123.5
	1902	2,145,491	787,253	240,110	3,758	4,257,685	12,011				
WEST NORTH CENTRAL:											
Minnesota	1909	13,592,568	8,904,544	10,732,309	2,157,108	58,975,781	152,153	97.4	191.7	130.2	434.0
	1902	6,887,017	2,839,332	3,678,964	339,244	25,620,677	28,492				
Iowa	1909	11,461,923	1,561,553	349,470	40,791	13,979,453	23,528	57.5	58.3	44.7	60.4
	1902	7,279,272	961,414	220,698	48,106	9,659,330	14,673				
Missouri	1909	15,667,995	7,071,069	1,955,492	135,384	30,378,747	109,971	56.9	39.8	49.8	137.1
	1902	9,989,027	2,856,858	1,398,827	172,514	20,279,481	46,384				
North Dakota	1909	426,910	108,187	10,647	1,325	564,812	2,025	84.8	656.7	73.3	141.3
	1902	231,014	86,467	1,407	2,795	325,967	839				
South Dakota	1909	3,446,944	1,496,495	4,776	50	6,415,788	15,648	−4.1	−45.3	−4.2	27.6
	1902	3,593,242	1,962,937	8,736	406	6,697,797	12,265				
Nebraska	1909	186,582	57,493	1,551	5,494	322,517	815	79.5	88.4	117.3	175.3
	1902	103,936	11,173	823		148,391	296				
Kansas	1909	10,351,532	1,917,384	1,665,839	369,681	18,386,812	67,408	75.0	336.8	93.0	285.8
	1902	5,915,006	1,218,192	382,181	207,708	9,526,060	17,472				
SOUTH ATLANTIC:											
Delaware	1909	287,742	178,432	4,392	5,800	516,213	1,480	14.8	−72.9	15.1	6.0
	1902	250,669	45,361	16,187		448,467	1,396				
Maryland	1909	3,816,561	714,571	136,772	11,148	6,164,122	19,060	−18.7	−3.4	−13.9	53.7
	1902	4,696,260	807,796	141,570	8,499	7,162,113	12,400				
Virginia	1909	5,501,589	1,855,201	421,863	119,043	8,999,920	35,554	41.9	32.3	43.3	128.8
	1902	3,876,556	837,287	318,763	35,964	6,280,148	15,539				
West Virginia	1909	38,177,028	12,801,961	7,796,597	4,307,288	73,452,935	417,282	91.8	101.2	61.8	73.7
	1902	19,905,757	8,513,767	3,874,780	5,194,279	48,362,664	240,170				
North Carolina	1909	1,005,826	268,315	21,412	3,340	1,402,765	6,225	67.6	7.2	51.7	66.2
	1902	599,959	118,494	19,971	9,000	924,676	3,746				
Georgia	1909	1,495,562	415,841	59,317	1,187	2,924,741	10,848	17.2	41.2	−5.0	15.7
	1902	1,276,362	556,229	42,008	122,619	3,080,287	9,373				
Florida	1909	2,870,113	1,992,490	197,792	217,691	8,915,181	42,375	118.9	50.4	202.8	309.1
	1902	1,310,898	618,057	131,493	4,021	2,943,806	10,357				

[1] Exclusive of governmental institutions, and of the coke and cement industries, but including figures for the lime industry.

[2] Exclusive of duplications resulting from the use of products of some enterprises as materials for others within the same industry.

[3] A minus sign (—) denotes decrease.

[4] Embraces Oklahoma, Rhode Island, and South Carolina for both years and the District of Columbia for 1909. These states are not shown separately nor are they included in the totals for their respective geographic divisions, because to do so would disclose individual operations.

[5] Exclusive of the amount paid to miners compensated by a share of the product for both years, and also of the wages of part-time employees for the petroleum and natural gas industries for 1909, which are included under "Contract work" in other tables for 1909.

TABLE 2.—PRODUCING MINES, QUARRIES, AND WELLS[1]—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY STATES: 1909 AND 1902—Continued.

GEOGRAPHIC DIVISION AND STATE.	Census.	PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT.				Value of products.[2]	Primary horse-power.	PER CENT OF INCREASE.[3]			
		Salaries and wages.	Supplies, materials, and fuel.[2]	Royalties and rent of mines.	Contract work.			Salaries and wages.	Royalties and rent of mines.	Value of products.	Horse-power.
EAST SOUTH CENTRAL:											
Kentucky	1909	$8,800,326	$1,537,544	$422,702	$165,913	$12,100,006	53,480	51.7	170.0	45.7	186.3
	1902	5,802,221	1,110,291	156,562	219,627	8,304,706	18,682				
Tennessee	[4] 1909	8,054,131	1,638,019	618,177	43,623	11,803,400	34,376	46.9	49.2	27.4	186.3
	1902	5,483,714	835,754	414,367	174,496	9,268,074	12,007				
Alabama	1909	14,993,631	3,667,943	333,148	767,035	22,491,204	92,647	33.0	70.8	30.4	237.7
	1902	11,273,928	1,995,942	195,045	267,279	17,247,992	27,433				
WEST SOUTH CENTRAL:											
Arkansas	1909	3,325,154	585,357	194,179	111,974	4,764,784	14,217	55.6	375.7	67.8	92.2
	1902	2,137,007	244,379	40,818	860	2,840,341	7,396				
Louisiana	1909	1,199,658	1,586,427	496,198	60,310	6,639,850	8,445	2,757.9	2,038.1	2,241.3	90.2
	1902	41,977	7,354	23,207	105,858	279,327	4,440				
Texas	1909	4,696,677	2,197,036	918,608	130,778	11,095,588	32,537	67.9	211.9	64.7	204.2
	1902	2,797,146	964,937	294,530	1,384,548	6,737,696	10,037				
MOUNTAIN:											
Idaho	1909	4,444,259	2,225,762	27,632	22,665	8,749,650	26,363	−0.8	−1.7	6.6	41.0
	1902	4,480,194	1,626,153	28,103	43,442	8,214,671	18,703				
Colorado	1909	19,959,195	7,273,927	1,017,847	123,828	39,397,859	98,777	−7.2	−4.4	−2.7	19.0
	1902	21,518,169	6,969,796	1,064,653	393,985	40,508,286	83,039				
All other [5]	1909	58,354,586	27,242,261	835,478	582,219	122,159,446	274,258	88.1	66.8	92.2	130.4
	1902	31,031,092	11,794,342	500,982	333,504	63,547,955	119,032				
PACIFIC:											
Washington	1909	6,342,392	1,196,670	141,231	23,849	10,826,503	20,987	66.1	149.7	100.7	76.2
	1902	4,063,773	615,807	56,558	29,600	5,393,659	11,910				
Oregon	1909	854,979	296,489	16,935	3,240	1,237,292	8,070	−30.0	−72.0	−40.7	114.6
	1902	1,222,178	408,112	60,499	19,522	2,087,389	3,761				
California	1909	21,430,590	20,463,053	2,814,926	496,568	59,012,946	155,115	66.9	310.3	106.3	123.1
	1902	12,842,486	5,533,935	685,982	520,894	28,611,307	69,532				

---

[1] Exclusive of governmental institutions, and of the coke and cement industries, but including figures for the lime industry.
[2] Exclusive of duplications resulting from the use of products of some enterprises as materials for others within the same industry.
[3] A minus sign (—) denotes decrease.
[4] Includes a small production of bituminous coal for Georgia.
[5] Embraces Arizona, Montana, Nevada, New Mexico, Utah, and Wyoming.

Table 3.—ALL MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, PERSONS

	INDUSTRY.	Number of operators.	Number of mines, quarries, and wells.	LAND CONTROLLED (ACRES).							
				All land.			Mineral and oil land.			Timber-land.	Other land.
				Aggregate.	Owned.	Held under lease.	Total.	Owned.	Held under lease.		
1	**All industries (United States)**	**23,664**	....	**[1] 28,184,678**	**10,219,801**	**15,976,566**	**[1] 23,312,186**	**7,683,349**	**15,639,812**	**1,169,394**	**1,703,098**
	FUELS:										
2	Coal, anthracite	198	429	[1] 465,647	316,868	160,468	[1] 274,870	183,144	102,701	71,851	118,926
3	Coal, bituminous	3,541	6,068	7,807,315	5,690,070	2,117,245	6,657,860	4,599,326	2,058,534	366,105	783,350
4	Petroleum and natural gas	8,053	166,448	13,809,939	762,276	13,047,663	13,809,939	762,276	13,047,663	....	....
5	Peat [2]	10	10	1,629	904	725	1,549	824	725	....	80
	METALS:										
6	Iron	198	504	1,343,634	1,087,865	255,769	416,016	306,257	109,759	456,682	470,936
7	Copper	174	381	291,177	286,350	4,827	140,373	136,320	4,053	58,952	91,852
	Precious metals—										
8	Deep mines	4,682	11,197	973,517	839,699	133,818	836,592	754,746	81,846	42,897	94,028
9	Placer mines	810	1,072	267,732	235,851	31,881	244,808	215,877	28,931	6,934	16,990
10	Lead and zinc	1,040	1,213	130,059	103,705	26,354	107,432	82,394	25,038	10,980	11,647
11	Quicksilver	30	40	31,976	28,576	3,400	17,351	14,311	3,040	5,430	9,195
12	Manganese	8	17	7,473	7,473	....	3,491	3,491	....	750	3,232
13	Tungsten	34	200	11,094	11,052	42	9,364	9,322	42	....	1,730
14	STRUCTURAL MATERIALS	4,020	4,645	349,326	271,853	77,473	245,745	175,336	70,409	29,352	74,229
15	Limestone	1,674	1,925	131,519	97,812	33,707	90,844	60,390	30,454	9,176	31,499
16	Granite	710	829	51,474	42,996	8,478	39,624	32,071	7,553	3,266	8,584
17	Sandstone	595	677	65,580	51,422	14,158	57,090	44,031	13,059	679	7,811
18	Marble	88	128	47,581	42,499	5,082	22,160	17,114	5,046	7,440	17,981
19	Slate	194	229	20,292	16,924	3,368	10,343	7,023	3,320	6,390	3,559
20	Traprock	196	220	18,085	8,067	10,018	16,377	6,602	8,775	25	2,683
21	Bluestone	563	637	14,795	12,133	2,662	10,307	8,105	2,202	2,376	2,112
	MISCELLANEOUS:										
22	Asbestos	10	96	5,500	3,310	2,190	4,900	2,710	2,190	600	....
23	Asphaltum and bituminous rock	12	19	7,137	4,263	2,874	7,123	4,263	2,860	....	14
24	Barytes	23	42	14,079	6,312	7,767	14,079	6,312	7,767	....	....
25	Bauxite	10	10	14,214	12,335	1,879	13,914	12,335	1,579	300	....
26	Buhrstones and millstones	14	14	506	455	51	319	268	51	80	107
27	Clay	267	342	60,026	45,520	14,506	49,831	38,362	11,469	5,207	4,988
28	Corundum and emery	4	6	1,553	923	630	1,553	923	630	....	....
29	Feldspar	22	28	3,556	1,771	1,785	2,940	1,280	1,660	492	124
30	Fluorspar	16	18	3,581	3,261	320	2,278	1,958	320	217	1,086
31	Fuller's earth	16	21	6,644	4,384	2,260	6,384	4,124	2,260	100	160
32	Garnet	3	4	5,396	1,396	4,000	996	696	300	4,300	100
33	Graphite	24	26	16,989	16,246	743	3,311	2,576	735	13,388	290
34	Grindstones	13	25	2,604	1,622	982	2,103	1,361	742	....	501
35	Gypsum	82	228	55,445	37,606	17,839	54,130	36,502	17,628	400	915
36	Infusorial earth	14	16	2,305	1,465	840	2,094	1,449	645	175	36
37	Magnesite	6	13	2,369	1,569	800	2,306	1,506	800	....	63
38	Marl	3	3	2,250	1,800	450	2,250	1,800	450	....	....
39	Mica	77	82	12,420	9,375	3,045	11,133	8,198	2,935	701	586
40	Mineral pigments	23	26	1,337	1,082	255	942	687	255	196	199
41	Monazite and zircon	4	4	50,550	30,455	20,095	50,550	30,455	20,095	....	....
42	Oilstones, scythestones, and whetstones	25	49	4,168	1,006	3,162	3,936	774	3,162	....	232
43	Phosphate rock	56	186	344,462	331,491	12,971	246,986	234,170	12,816	92,680	4,896
44	Precious stones	30	38	3,119	3,039	80	2,179	2,099	80	820	120
45	Pumice	3	4	320	40	280	320	40	280	....	....
46	Pyrite	11	12	9,179	6,397	2,782	5,735	4,592	1,143	115	3,329
47	Quartz	14	14	1,877	852	1,025	1,547	522	1,025	120	210
48	Sulphur	4	4	6,747	6,747	....	2,660	2,660	....	....	4,087
49	Talc and soapstone	39	46	11,576	9,144	2,432	6,254	3,918	2,336	500	4,822
50	Tripoli	4	7	874	618	256	874	618	256	....	....
51	ALL OTHER INDUSTRIES [5]	39	81	43,377	32,775	10,602	43,169	32,567	10,602	170	38

---

[1] The aggregate acreage for "All land" is exclusive of a duplication of 11,689 acres in figures for owned and leased acreage. Of this amount, 10,975 acres are mineral land.

[2] Exclusive of 2 nonproducing enterprises which are included in "All other industries."

[3] Includes $4,876,095 which can not be distributed among the several quarrying industries.

[4] In some cases the same operator conducted two or more quarries producing different kinds of stone, all quarries being managed through one central administrative office. In such instances it was impossible to assign the corporate officers and the central office force to any particular quarry; this was also the case in respect to taxes, which were reported in a lump sum for all properties. The total central office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for "Structural materials," however, the number of officers and salaried employees, as well as their salaries, and the amount of taxes, appear under the proper heads. The amounts thus included in the item of "Sundry expenses" for individual industries and distributed in the totals for "Structural materials" are as follows: Salaried officers of corporations, superintendents, and managers, $389,239; clerks and other subordinate salaried employees, $242,325; taxes, $27,767.

ENGAGED IN INDUSTRIES, AND POWER FOR THE UNITED STATES, BY INDUSTRIES: 1909.

	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.									
		Total.	Services.			Supplies.		Miscellaneous.			
			Salaries.								
			Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wages.	Supplies and materials.	Fuel and rent of power.	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and other sundry expenses.
1	$3,662,527,064	$1,074,191,429	$34,916,388	$20,962,080	$599,705,989	$213,607,488	$48,503,412	$84,154,928	$18,070,451	$30,890,458	$45,580,229
2	246,950,806	139,587,968	2,324,374	2,269,090	92,491,097	23,563,696	3,195,789	7,981,639	2,685,633	1,702,865	3,373,785
3	1,071,599,748	396,655,893	12,762,213	9,091,355	294,425,516	40,663,377	7,512,084	12,086,088	4,493,265	2,423,982	13,198,013
4	697,434,811	142,683,027	6,039,379	2,419,200	28,094,033	54,773,654	1,643,147	21,347,500	2,603,189	17,039,672	9,723,253
5	318,024	96,034	17,178	3,018	40,313	6,490	17,974	800	907	....	9,354
6	305,586,756	74,934,131	1,768,057	1,655,935	30,047,986	12,835,310	4,715,963	15,210,335	4,004,319	2,762,617	1,933,609
7	312,970,073	108,579,464	1,986,049	1,820,417	49,858,102	34,483,243	13,399,270	1,789,656	1,980,803	657,260	2,604,664
8	676,839,197	89,085,766	4,447,644	1,256,834	40,954,841	25,570,152	6,056,401	1,231,005	1,224,322	4,693,520	3,651,047
9	60,205,141	7,316,908	409,061	72,772	2,912,910	2,339,582	681,821	142,716	123,016	127,069	507,961
10	63,722,646	24,694,749	913,223	198,556	10,564,099	6,822,275	2,424,885	2,303,382	167,662	260,595	1,040,072
11	3,612,612	815,765	70,491	16,040	476,898	141,214	56,501	5,288	9,885	9,878	29,590
12	1,065,650	40,892	6,823	480	24,312	5,629	1,760	....	828	....	1,060
13	1,928,030	449,657	45,313	4,056	220,549	100,515	9,213	1,375	3,500	40,976	24,160
14	[3] 133,581,324	63,795,977	[4] 3,655,041	[4] 1,507,634	39,725,464	8,855,122	3,487,366	1,439,546	[4] 496,858	469,810	[4] 4,159,136
15	44,362,597	23,952,619	1,228,632	492,830	14,104,797	3,796,549	1,508,307	488,956	161,142	206,300	1,965,106
16	25,436,297	16,196,712	741,771	328,361	11,114,590	1,923,422	757,078	194,353	113,132	65,744	958,261
17	15,758,455	6,626,438	398,383	132,086	3,993,340	909,955	319,961	97,604	53,075	73,359	648,675
18	20,759,107	4,886,366	288,398	102,689	3,098,077	552,706	263,895	47,971	70,908	29,144	432,578
19	12,343,431	5,860,431	310,789	98,580	4,108,185	524,386	329,824	271,252	33,463	28,962	154,990
20	8,745,553	5,090,538	244,777	102,317	2,538,964	1,018,090	279,082	282,501	32,301	60,204	532,302
21	1,299,789	1,182,873	53,052	8,446	767,511	130,014	29,219	56,909	5,070	6,097	126,555
22	352,734	109,640	16,117	3,620	45,500	24,542	400	45	957	400	18,059
23	2,557,273	301,673	39,809	4,320	128,977	66,159	13,598	1,517	5,694	15,546	26,053
24	472,751	176,967	13,623	6,560	90,310	21,756	6,468	14,232	1,967	14,346	7,705
25	3,023,414	316,221	24,878	7,608	198,273	21,665	33,624	6,909	3,993	....	19,271
26	9,685	18,354	225	....	16,625	483	25	271	28	....	697
27	6,814,837	2,296,194	181,763	44,024	1,365,395	281,953	108,389	85,403	25,245	48,108	155,914
28	316,909	7,459	1,044	....	3,675	260	....	708	11	....	1,761
29	415,769	238,896	25,367	3,336	106,653	40,852	15,892	9,238	1,473	8,681	27,404
30	311,715	323,644	20,969	5,024	170,455	35,144	24,659	1,972	1,056	949	63,416
31	1,362,427	274,776	33,880	4,470	118,629	35,797	48,010	582	2,863	67	30,478
32	181,858	98,206	3,550	900	40,204	19,491	5,795	6,850	4,869	....	16,547
33	1,763,786	391,491	34,688	3,934	174,646	71,826	36,030	10,385	4,644	15,028	40,310
34	304,324	339,261	20,572	5,373	148,323	99,470	14,562	3,348	2,134	25,597	19,882
35	10,260,025	4,911,952	289,074	262,935	1,825,007	988,293	573,464	74,916	39,162	16,558	842,543
36	147,900	61,083	4,990	120	27,627	4,432	9,235	735	813	2,430	10,701
37	89,016	62,444	5,338	2,105	32,479	6,282	7,556	253	252	....	8,179
38	70,146	17,812	2,895	1,030	9,587	1,463	1,525	....	247	....	1,065
39	1,275,488	188,171	14,170	3,338	125,366	11,479	12,392	5,684	907	6,536	8,299
40	386,501	115,860	15,082	1,800	43,974	14,710	7,775	3,469	1,255	20,388	7,407
41	63,000	50,909	3,100	600	5,046	1,750	770	100	303	36,500	2,740
42	250,078	101,064	4,083	1,000	70,821	5,122	6,671	1,594	1,249	6,622	3,902
43	30,774,656	7,458,997	435,348	160,817	3,240,334	900,078	1,364,196	345,568	87,940	251,849	672,867
44	724,070	198,135	36,169	2,700	97,783	30,750	1,012	....	1,761	....	27,960
45	4,400	6,087	....	90	4,778	539	....	190	....	....	490
46	1,717,410	734,355	34,573	20,329	408,419	152,143	71,537	887	6,145	2,730	37,592
47	343,883	155,418	10,447	2,679	81,648	17,461	12,065	2,959	1,512	16,351	10,296
48	5,293,900	4,538,389	64,290	46,059	324,538	248,383	708,384	....	53,606	361	3,092,768
49	8,659,744	1,036,371	71,334	31,678	504,116	196,054	66,339	31,287	15,501	3,550	116,512
50	170,800	42,493	6,000	840	22,657	7,407	2,006	2,662	713	....	208
51	8,593,747	882,876	58,174	19,404	438,024	141,483	148,859	3,852	9,964	9,617	53,499

---

[5] Includes operators as follows: Antimony, 2; asphaltum and bituminous rock, 2; bismuth, 1; bluestone, 1; borax, 3; chromite, 3; feldspar, 1; garnet, 1; grindstone, 1; infusorial earth, 1; lithium, 1; lithographic stone, 2; magnesite, 1; manganiferous iron, 2; mineral pigments, 2; molybdenum, 4; monazite and zircon, 1; nickel and cobalt, 1; peat, 2; pyrite, 1; quartz, 1; tin, 2; titanium, 1; uranium, 1; and vanadium, 1.

TABLE 3.—ALL MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, PERSONS

	INDUSTRY.	PERSONS ENGAGED IN INDUSTRY.												
		Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners December 15, or nearest representative day.					
			Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Aggregate.			Men 16 years of age and over.		
												All classes.		
				Total.	Performing manual labor.				Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.
1	**All industries (United States)**	**1,168,948**	**64,868**	**33,691**	**8,937**	**6,169**	**16,008**	**25,298**	**1,086,782**	**375,281**	**711,601**	**1,078,601**	**370,227**	**708,382**
	FUELS:													
2	Coal, anthracite	178,331	1,321	188	72	171	962	3,185	173,825	48,834	124,991	170,578	45,600	124,978
3	Coal, bituminous	593,442	11,670	3,748	1,718	2,334	5,588	11,298	570,474	94,378	476,096	566,753	93,561	473,192
4	Petroleum and natural gas	64,089	19,749	16,420	2,174	1,220	2,109	3,058	41,282	41,282	....	41,267	41,267	....
5	Peat [1]	203	15	1	....	5	9	6	182	182	....	182	182	....
	METALS:													
6	Iron	55,980	1,132	81	26	134	917	1,865	52,983	25,453	27,530	52,494	25,133	27,361
7	Copper	56,057	700	79	42	217	404	1,508	53,849	22,824	31,025	53,783	22,763	31,020
	Precious metals—													
8	Deep mines	58,208	7,785	5,146	1,832	775	1,864	1,179	49,244	16,040	33,204	49,229	16,028	33,201
9	Placer mines	6,208	1,348	1,103	776	56	189	93	4,767	3,895	872	4,762	3,890	872
10	Lead and zinc	24,891	2,675	2,070	1,199	133	472	277	21,939	8,212	13,727	21,904	8,182	13,722
11	Quicksilver	779	54	22	9	12	20	16	709	341	368	709	341	368
12	Manganese	107	16	10	1	....	6	1	90	71	19	89	70	19
13	Tungsten	336	59	39	22	6	14	6	271	60	211	271	60	211
14	STRUCTURAL MATERIALS	[2] 101,481	[2] 6,804	4,153	1,832	[2] 822	[2] 1,829	[2] 2,040	92,637	92,097	540	92,262	91,722	540
15	Limestone	41,188	2,664	1,651	640	288	725	693	37,831	37,831	....	37,708	37,708	....
16	Granite	22,229	1,254	735	318	159	360	402	20,573	20,573	....	20,486	20,486	....
17	Sandstone	11,025	913	587	215	84	242	204	9,908	9,908	....	9,861	9,861	....
18	Marble	6,730	207	62	6	58	87	149	6,374	6,374	....	6,374	6,374	....
19	Slate	10,215	515	233	75	94	188	184	9,516	8,976	540	9,408	8,868	540
20	Traprock	6,748	317	116	22	60	141	171	6,260	6,260	....	6,250	6,250	....
21	Bluestone	3,020	827	769	556	12	46	18	2,175	2,175	....	2,175	2,175	....
	MISCELLANEOUS:													
22	Asbestos	113	9	....	....	2	7	6	98	83	15	98	83	15
23	Asphaltum and bituminous rock	241	20	....	....	8	12	6	215	145	70	215	146	70
24	Barytes	372	35	23	11	1	11	7	330	192	138	330	192	138
25	Bauxite	726	27	1	....	12	14	9	690	690	....	671	671	....
26	Buhrstones and millstones	79	19	18	15	....	1	....	60	60	....	60	60	....
27	Clay	4,397	420	258	78	50	112	76	3,901	3,492	409	3,834	3,442	392
28	Corundum and emery	19	2	....	....	....	2	....	17	15	2	17	15	2
29	Feldspar	363	28	11	7	6	11	10	325	309	16	324	308	16
30	Fluorspar	390	31	11	5	8	12	7	352	212	140	352	212	140
31	Fuller's earth	380	27	3	3	12	12	8	345	345	....	345	345	....
32	Garnet	120	7	5	2	....	2	1	112	112	....	112	112	....
33	Graphite	471	32	3	2	8	21	9	430	416	14	430	416	14
34	Grindstones	430	16	5	2	5	6	6	408	408	....	408	408	....
35	Gypsum	4,240	167	9	7	52	106	274	3,799	3,338	461	3,799	3,338	461
36	Infusorial earth	99	23	16	1	2	5	1	75	61	14	74	60	14
37	Magnesite	84	8	3	2	2	3	2	74	57	17	74	57	17
38	Marl	38	7	4	....	1	2	2	29	19	10	29	19	10
39	Mica	637	138	119	65	....	19	2	497	241	256	488	234	254
40	Mineral pigments	246	35	20	2	4	11	2	209	180	29	209	180	29
41	Monazite and zircon	34	8	6	....	....	2	1	25	25	....	25	25	....
42	Oilstones, scythestones, and whetstones	245	31	25	12	....	6	1	213	213	....	213	213	....
43	Phosphate rock	8,710	222	19	1	58	145	175	8,313	8,033	280	8,245	7,965	280
44	Precious stones	172	44	16	4	11	17	5	123	92	31	123	92	31
45	Pumice	25	5	5	3	....	....	2	18	18	....	16	16	....
46	Pyrite	1,160	22	4	....	5	13	27	1,111	643	468	1,087	619	468
47	Quartz	208	18	7	....	2	9	6	184	184	....	182	182	....
48	Sulphur	460	13	....	....	4	9	39	408	398	10	408	398	10
49	Talc and soapstone	1,452	64	16	2	19	29	52	1,336	1,014	322	1,326	1,005	321
50	Tripoli	73	11	4	....	2	5	2	60	60	....	60	60	....
51	ALL OTHER INDUSTRIES [4]	852	51	20	10	10	21	28	773	557	216	772	556	216

---

[1] Exclusive of 2 nonproducing enterprises which are included in "All other industries."

[2] The following numbers of persons, which could not be distributed among the several quarrying industries, are included under the proper headings in the totals for "Structural materials": Aggregate, 326; salaried officers of corporations, 67; superintendents and managers, 40; and clerks and other subordinate salaried employees, 219.

[3] Same number reported for one or more other months.

ENGAGED IN INDUSTRIES, AND POWER FOR THE UNITED STATES, BY INDUSTRIES: 1909—Continued.

	PERSONS ENGAGED IN INDUSTRY—continued.															
	Wage earnars Dec. 15, or nearest representative day—Continued.												Wage earners employed on 15th day of—			
	Men 16 years of age and over—Continued.									Boys under 16 years of age.			Maximum month.		Minimum month.	
	Engineers, firemen, mechanics, etc.			Miners and miners' helpers.			Quarrymen and stonecutters.	All other employees.								
	Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.		Above ground.	Below ground.	Total.	Above ground.	Below ground.	Month.	Number.	Month.	Number
1	**107,315**	**97,181**	**10,134**	**585,205**	**23,642**	**561,563**	**56,449**	**192,955**	**136,685**	**9,173**	**5,054**	**3,116**	Nov.....	**1,038,758**	Apr.....	**940,000**
2	12,287	9,767	2,520	83,347	10	83,337	....	35,823	39,121	3,247	3,234	13	Mar.....	173,297	Aug.....	166,063
3	29,904	24,463	5,441	384,389	41	384,348	....	69,057	83,403	3,721	817	2,904	Dec.....	560,672	May.....	478,642
4	28,085	28,085	....	....	....	....	....	13,182	....	16	15	....	Nov.....	41,099	Feb.....	34,124
5	21	21	....	69	69	....	....	92	....	....	....	....	June....	185	Jan.....	44
6	7,270	6,783	487	25,191	4,854	20,337	....	13,496	6,637	489	320	169	Nov.....	51,654	Jan.....	43,746
7	7,016	6,394	622	28,773	1,269	27,504	....	15,100	2,894	66	61	5	Oct.....	53,905	Dec.....	50,851
8	6,969	6,249	720	31,220	1,849	29,371	....	7,930	3,110	15	12	3	Oct.....	41,487	Jan.....	35,539
9	836	786	50	2,853	2,046	807	....	1,058	15	6	5	....	July....	3,759	Jan.....	2,926
10	3,841	3,667	174	12,757	459	12,298	....	4,056	1,250	35	30	6	Dec.....	18,540	Jan.....	15,446
11	84	81	3	469	126	343	....	134	22	....	....	....	Dec.....	701	Nov.....	607
12	8	8	....	72	53	19	....	9	....	1	1	....	Aug.....	90	Feb.....	50
13	16	16	....	218	7	211	....	37	....	....	....	....	Dec.....	242	Feb.....	138
14	8,291	8,271	20	6,331	4,825	506	55,018	23,608	14	375	375	....	....	....	....	....
15	3,268	3,268	....	....	....	....	25,782	8,658	....	123	123	....	Sept....	37,252	Jan.....	17,912
16	1,921	1,921	....	....	....	....	14,296	4,269	....	87	87	....	Sept....	21,908	Jan.....	13,732
17	935	935	....	....	....	....	6,738	2,188	....	47	47	....	July....	9,888	Jan.....	4,763
18	536	536	....	....	....	....	2,751	3,087	....	....	....	....	July....	6,492	Jan.....	5,532
19	932	912	20	5,331	4,825	506	....	3,131	14	108	108	....	Sept....	9,397	Jan.....	7,881
20	612	612	....	....	....	....	3,832	1,806	....	10	10	....	Sept....	6,696	Feb.....	2,486
21	87	87	....	....	....	....	1,619	469	....	....	....	....	June....	2,248	Jan.....	743
22	12	12	....	65	50	15	....	21	....	....	....	....	Dec.....	88	Mar.....	36
23	23	23	....	166	98	68	....	24	2	....	....	....	Aug.....	279	Jan.....	161
24	9	8	1	206	76	130	....	108	7	....	....	....	July....	298	Feb.....	165
25	57	57	....	583	583	....	....	31	....	19	19	....	Nov.....	723	Jan.....	404
26	....	....	....	....	....	....	60	....	....	....	....	....	Jan.....	57	July.....	39
27	204	201	3	2,406	2,028	378	....	1,213	11	67	50	17	Sept....	3,481	Jan.....	2,793
28	1	1	....	15	13	2	....	1	....	....	....	....	Aug.[3]...	15	Jan.....	5
29	21	20	1	262	262	....	....	26	15	1	1	....	Oct.....	284	Jan.....	206
30	68	55	13	212	85	127	....	72	....	....	....	....	Oct.....	348	May.....	214
31	51	51	....	127	127	....	....	167	....	....	....	....	Jan.....	381	Dec.....	304
32	7	7	....	39	39	....	....	66	....	....	....	....	Sept.[3]...	129	Jan.....	61
33	65	61	4	158	148	10	....	207	....	....	....	....	July.....	387	Mar.....	261
34	33	33	....	....	....	....	322	53	....	....	....	....	May.....	496	Feb.....	309
35	126	113	13	799	428	371	....	2,797	77	....	....	....	Oct.....	3,697	Jan.....	3,132
36	13	13	....	44	33	11	....	14	3	1	1	....	Nov.....	74	Mar.....	51
37	7	7	....	33	16	17	....	34	....	....	....	....	July....	65	Feb.....	39
38	6	6	....	20	10	10	....	3	....	....	....	....	June....	38	Jan.[3]....	21
39	62	32	30	332	121	211	....	81	13	9	7	2	Sept....	364	Mar.....	188
40	21	21	....	75	46	29	....	113	....	....	....	....	Aug.....	180	Jan.....	86
41	....	....	....	25	25	....	....	....	....	....	....	....	Nov.[3]...	25	June....	2
42	3	3	....	....	....	....	72	138	....	....	....	....	May.....	196	Feb.....	149
43	1,060	1,060	....	3,605	3,228	277	977	2,700	3	68	68	....	Jan.....	8,136	Oct.....	7,635
44	3	3	....	101	71	30	....	18	1	....	....	....	Jan.....	111	July.....	82
45	....	....	....	16	16	....	....	....	....	2	2	....	Sept....	24	Jan.[3]....	8
46	158	146	12	302	28	274	....	445	182	24	24	....	June....	1,201	Sept....	984
47	15	15	....	98	98	....	....	69	....	2	2	....	Apr.....	200	Aug.....	123
48	142	142	....	28	18	10	....	238	....	....	....	....	Jan.....	390	Apr.....	346
49	422	411	11	520	216	305	....	379	6	10	9	1	Sept....	1,414	Jan.....	1,164
50	8	8	....	25	25	....	....	27	....	....	....	....	July.....	69	June[3]...	65
51	90	81	9	354	147	207	....	328	....	1	1	....	Oct.....	706	Jan.....	547

---

[4] Includes operators as follows: Antimony, 2; asphaltum and bituminous rock, 2; bismuth, 1; bluestone, 1; borax, 3; chromite, 3; feldspar, 1; garnet, 1; grindstones, 1; infusorial earth, 1; lithium, 1; lithographic stone, 2; magnesite, 1; manganiferous iron, 2; mineral pigments, 2; molybdenum, 4; monazite and zircon, 1; nickel and cobalt, 1; peat, 2; pyrite, 1; quartz, 1; tin, 2; titanium, 1; uranium, 1; and vanadium, 1.

TABLE 3.—ALL MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, PERSONS ENGAGED IN INDUSTRIES, AND POWER FOR THE UNITED STATES, BY INDUSTRIES: 1909—Continued.

	INDUSTRY.	PRIMARY POWER.										ELECTRIC MOTORS RUN BY CURRENT GENERATED BY THE ENTERPRISE USING.	
		Aggregate horsepower.	Owned.							Electric motors operated by purchased current.			
			Total horsepower.	Steam engines.		Gas or gasoline engines.		Water wheels.[1]					
				Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.
1	**All industries (United States)**	4,699,910	4,483,807	71,801	3,840,923	23,799	528,284	1,220	114,620	5,070	218,103	14,342	507,624
	FUELS:												
2	Coal, anthracite	678,698	677,288	7,601	676,516	25	772	......	......	32	1,410	1,152	46,088
3	Coal, bituminous	1,230,010	1,204,716	11,772	1,202,039	349	2,329	9	348	840	25,294	9,720	329,538
4	Petroleum and natural gas	1,230,546	1,230,386	37,231	754,720	21,794	475,666	......	......	6	160	455	8,589
5	Peat[2]	1,416	1,366	18	1,354	3	12	......	......	1	50	8	244
	METALS:												
6	Iron	350,005	345,540	3,610	329,784	29	3,091	30	12,665	55	4,465	345	22,842
7	Copper	380,712	328,126	727	307,796	71	2,325	15	18,005	822	52,586	549	27,024
	Precious metals—												
8	Deep mines	260,190	185,417	1,641	110,639	826	17,450	861	57,328	1,954	74,773	624	17,107
9	Placer mines	32,279	13,391	83	3,042	47	681	153	9,668	481	18,888	39	1,412
10	Lead and zinc	114,045	110,577	2,250	97,365	223	13,143	3	69	63	3,468	363	12,108
11	Quicksilver	904	904	10	496	20	291	4	117	......	......	9	179
12	Manganese	423	423	12	423	......	......	......	......	......	......	......	......
13	Tungsten	613	548	11	385	10	97	3	66	4	65	3	45
	STRUCTURAL MATERIALS	304,917	274,565	5,555	258,856	281	6,736	65	8,973	681	30,352	609	17,830
14	Limestone	125,903	116,452	2,173	113,265	120	2,915	9	272	206	9,451	180	5,716
15	Granite	61,095	54,213	1,346	52,549	65	1,142	6	522	159	6,882	57	1,346
16	Sandstone	33,487	29,738	744	28,721	43	989	1	28	65	3,749	83	2,002
17	Marble	21,985	21,150	244	13,169	13	448	34	7,533	9	835	266	8,035
18	Slate	30,167	28,159	716	27,645	3	46	14	468	63	2,008	2	60
19	Traprock	29,211	21,917	255	20,922	19	995	......	......	173	7,294	18	621
20	Bluestone	3,069	2,936	77	2,585	18	201	1	150	6	133	3	160
	MISCELLANEOUS:												
21	Asbestos	380	380	5	380	......	......	......	......	......	......	......	......
22	Asphaltum and bituminous rock	828	828	30	818	2	10	......	......	......	......	......	......
23	Barytes	262	262	7	102	......	......	2	160	......	......	......	......
24	Bauxite	1,565	1,565	30	1,565	......	......	......	......	......	......	20	180
25	Buhrstones and millstones	......	......	......	......	......	......	......	......	......	......	......	......
26	Clay	8,888	8,329	165	7,979	25	329	2	21	14	559	......	......
27	Corundum and emery	......	......	......	......	......	......	......	......	......	......	......	......
28	Feldspar	993	933	19	829	1	4	3	100	1	60	2	20
29	Fluorspar	1,189	1,189	19	1,189	......	......	......	......	......	......	9	140
30	Fuller's earth	1,739	1,719	36	1,719	......	......	......	......	1	20	3	45
31	Garnet	315	315	3	315	......	......	......	......	......	......	2	100
32	Graphite	2,732	2,622	26	2,060	5	59	4	503	3	110	4	490
33	Grindstones	1,648	1,640	47	1,594	4	46	......	......	2	8	......	......
34	Gypsum	17,695	15,035	90	13,399	19	691	10	945	81	2,660	49	1,333
35	Infusorial earth	316	316	4	185	4	131	......	......	......	......	......	......
36	Magnesite	126	124	3	122	1	2	......	......	1	2	......	......
37	Marl	105	105	3	105	......	......	......	......	......	......	......	......
38	Mica	463	463	9	443	1	20	......	......	......	......	7	172
39	Mineral pigments	849	849	22	801	1	10	2	38	......	......	......	......
40	Monazite and zircon	45	25	1	25	......	......	......	......	2	20	......	......
41	Oilstones, scythestones, and whetstones	448	438	10	384	1	4	1	50	1	10	......	......
42	Phosphate rock	50,981	50,881	554	47,272	32	3,609	......	......	1	100	339	21,388
43	Precious stones	109	109	4	105	2	4	......	......	......	......	......	......
44	Pumice	......	......	......	......	......	......	......	......	......	......	......	......
45	Pyrite	5,758	4,850	57	4,840	1	10	......	......	21	908	1	20
46	Quartz	1,219	1,219	7	847	2	47	6	325	......	......	......	......
47	Sulphur	3,114	3,114	34	3,109	1	5	......	......	......	......	......	......
48	Talc and soapstone	9,433	9,298	73	3,810	4	290	44	5,198	3	135	21	430
49	Tripoli	265	265	3	225	......	......	2	40	......	......	......	......
	ALL OTHER INDUSTRIES[3]	3,687	3,687	19	3,286	15	400	1	1	......	......	9	300

---

[1] Includes 128 water motors, with an aggregate horsepower of 7,955.

[2] Exclusive of 2 nonproducing enterprises which are included in "All other industries."

[3] Includes operators as follows: Antimony, 2; asphaltum and bituminous rock, 2; bismuth, 1; bluestone, 1; borax, 3; chromite, 3; feldspar, 1; garnet, 1; grindstones, 1; infusorial earth, 1; lithium, 1; lithographic stone, 2; magnesite, 1; manganiferous iron, 2; mineral pigments, 2; molybdenum, 4; monazite and zircon, 1; nickel and cobalt, 1; peat, 2; pyrite, 1; quartz, 1; tin, 2; titanium, 1; uranium, 1; and vanadium, 1.

TABLE 4.—ALL MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES,

	STATE.	Number of operators.	Number of mines and quarries.	Number of wells.	LAND CONTROLLED (ACRES).							
					All land.			Mineral and oil land.			Timber land.	Other land.
					Aggregate.	Owned.	Held under lease.	Total.	Owned.	Held under lease.		
1	**Continental United States**	[1] 23,684	27,240	186,448	[2] 26,184,678	10,219,801	16,976,666	[2] 23,312,186	7,683,349	15,639,812	1,169,384	1,703,098
	NEW ENGLAND:											
2	Maine	100	105		11,836	10,015	1,821	5,528	3,980	1,548	5,695	613
3	New Hampshire	45	53		7,979	7,776	203	7,429	7,228	201	15	535
4	Vermont	141	188		36,663	34,520	2,143	9,755	7,761	1,994	8,892	18,016
5	Massachusetts	139	147		8,077	7,205	872	5,716	4,879	837	1,017	1,344
6	Rhode Island	21	27		659	641	118	512	424	88	60	87
7	Connecticut	71	75		3,878	2,171	1,707	3,239	1,571	1,668	80	559
	MIDDLE ATLANTIC:											
8	New York	1,356	755	11,342	508,386	315,896	192,490	335,140	147,154	187,986	150,255	22,991
9	New Jersey	131	151		26,809	14,329	12,480	23,780	11,740	12,040	700	2,329
10	Pennsylvania	4,882	3,021	59,797	[2] 5,362,309	2,301,707	3,072,291	[2] 4,862,448	1,869,847	3,003,576	119,398	380,463
	EAST NORTH CENTRAL:											
11	Ohio	1,885	966	35,082	2,142,730	355,300	1,787,430	2,091,920	310,383	1,781,537	14,253	36,557
12	Indiana	1,014	481	10,377	524,502	168,805	355,697	505,032	150,983	354,049	4,946	14,524
13	Illinois	924	764	10,925	1,001,886	443,569	558,317	968,573	414,452	554,121	3,472	29,841
14	Michigan	97	187	21	469,907	413,528	56,379	137,716	93,393	44,323	216,520	115,671
15	Wisconsin	290	308		40,657	26,260	14,397	25,057	11,872	13,185	4,313	11,287
	WEST NORTH CENTRAL:											
16	Minnesota	163	260		339,541	206,647	132,894	20,062	6,314	13,748	86,611	232,868
17	Iowa	388	446		84,695	31,483	53,212	76,383	24,156	52,227	780	7,532
18	Missouri	1,050	1,255	39	370,423	292,014	78,409	265,158	188,120	77,038	12,294	92,971
19	North Dakota	53	53	6	34,695	12,300	22,395	30,356	7,971	22,385		4,339
20	South Dakota	55	62	3	42,924	42,425	499	22,729	22,230	499	18,015	2,180
21	Nebraska	18	20		1,038	524	514	1,038	524	514		
22	Kansas	646	585	3,402	599,249	79,292	519,957	591,366	72,123	519,243	135	7,748
	SOUTH ATLANTIC:											
23	Delaware	9	9		642	628	14	282	268	14	24	336
24	Maryland	126	173		109,419	102,189	7,230	73,564	66,595	6,969	18,519	17,336
25	Virginia	163	262		307,060	171,726	135,334	257,747	124,308	133,439	25,852	23,461
26	West Virginia	815	728	15,156	5,599,794	644,804	4,954,990	5,556,577	616,427	4,940,150	13,435	29,782
27	North Carolina	127	145		77,580	46,909	30,671	72,011	44,910	27,101	1,356	4,213
28	South Carolina	29	32		47,899	42,642	5,257	45,555	40,298	5,257	100	2,244
29	Georgia	92	109		136,129	132,028	4,101	124,945	121,254	3,691	4,446	6,738
30	Florida	36	96		270,167	263,147	7,020	178,371	171,431	6,940	88,501	3,295
	EAST SOUTH CENTRAL:											
31	Kentucky	441	444	1,109	711,803	295,241	416,562	671,924	260,492	411,432	19,578	20,301
32	Tennessee	221	375	1	809,634	674,945	134,689	525,871	408,164	117,707	154,753	129,010
33	Alabama	184	312	6	880,756	782,889	97,867	686,350	589,177	97,173	135,978	58,428
	WEST SOUTH CENTRAL:											
34	Arkansas	105	156	62	111,852	32,088	79,764	109,460	29,791	79,669	1,509	883
35	Louisiana	33	2	246	102,251	23,271	78,980	98,169	19,189	78,980		4,082
36	Oklahoma	880	217	12,135	1,232,320	23,172	1,209,148	1,225,446	23,072	1,202,374	6,820	54
37	Texas	258	95	2,281	468,785	185,621	283,164	460,132	178,446	281,686	2,797	5,856
	MOUNTAIN:											
38	Montana	638	1,299		157,940	138,081	19,859	120,899	101,040	19,859	5,680	31,361
39	Idaho	890	2,431		143,466	137,731	5,735	139,245	133,515	5,730	1,534	2,687
40	Wyoming	126	367	38	260,844	82,497	178,347	254,153	76,342	177,811	220	6,471
41	Colorado	1,010	2,989	76	300,028	191,254	108,774	270,834	163,392	107,442	1,115	28,079
42	New Mexico	149	358		467,626	340,975	126,651	227,795	155,281	72,514	9,625	230,206
43	Arizona	439	1,147		138,963	125,979	12,984	132,248	119,269	12,979	2,620	4,096
44	Utah	499	671	4	152,350	146,448	5,902	125,043	119,231	5,812	4,600	22,707
45	Nevada	548	1,021		93,797	88,117	5,680	81,798	76,173	5,625	108	11,891
	PACIFIC:											
46	Washington	416	1,250		156,120	132,023	24,097	142,771	119,641	23,130	2,300	11,049
47	Oregon	235	457		61,058	53,622	7,436	46,218	39,382	6,836	7,188	7,672
48	California	2,021	2,170	4,340	1,062,596	588,234	474,362	990,885	521,923	468,962	13,305	58,406
49	ALL OTHER STATES[5]	12	16		704,956	7,233	697,723	704,956	7,233	697,723		
50	Alaska	673										
51	Hawaii	4	6		16	6	10					16
52	Porto Rico	14	14		933	739	194	124	111	13	35	774

---

[1] Exclusive of duplications, 307 operators having reported in two or more states.

[2] The aggregate acreage for "All land" is exclusive of a duplication of 11,689 acres in figures for owned and leased acreage. Of this amount, 10,975 acres are mineral land.

[3] The total for the United States includes capital to the amount of $59,468,780, which could not be distributed among the several states.

[4] In some cases the same operator conducted enterprises in two or more states, all such enterprises being managed through one central administrative office. In such cases it was impossible to assign the corporate officers and the central office force to any particular state; this was also the case in respect to contract work and taxes, which were reported in a lump sum for all properties. The total central office expenses were accordingly apportioned among the several states pro rata to the total expenses reported for each state and the estimated amounts of such administrative expenses were added to "Sundry expenses." In the totals for the United States, however, the number of officers and salaried employees, as well as their salaries, and the amount of contract work and taxes, appear under the proper heads. The amounts thus included in the item of "Sundry expenses" for individual states and distributed in the totals for the United States are as follows: Officers of corporations, superintendents, and managers, $922,899 clerks and other subordinate salaried employees, $645,399; taxes, $142,240; and contract work, $61,801.

PERSONS ENGAGED IN MINING INDUSTRIES, AND POWER FOR THE UNITED STATES, BY STATES: 1909.

	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.									
		Total.	Services.			Supplies.		Miscellaneous.			
			Salaries.								
			Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wages.	Supplies and materials.	Fuel and rent of power.	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and other sundry expenses.
1	[3]$3,662,527,064	$1,074,191,426	[4]$34,916,398	[4]$20,962,060	$599,706,969	$213,607,486	$48,603,412	$64,154,628	[4]$18,070,461	[4]$30,680,458	[4]$46,680,229
2	[3]3,878,531	1,889,815	88,779	31,847	1,341,183	221,452	86,153	16,302	16,281	6,728	81,090
3	1,546,603	1,204,966	45,619	7,869	926,352	100,931	54,427	4,271	6,251	9,246	51,000
4	[3]14,994,696	6,877,481	227,650	142,687	4,475,209	955,438	367,468	84,332	72,645	64,698	487,454
5	5,054,093	2,987,175	153,683	59,675	1,966,997	363,698	153,258	66,409	40,187	16,272	177,996
6	567,015	673,877	29,948	27,941	409,883	130,947	26,991	8,552	3,343	....	36,272
7	[3]2,964,442	1,158,491	59,111	23,573	729,377	127,424	71,917	16,771	17,657	13,761	98,900
8	[3]45,333,052	10,004,532	497,576	212,089	4,723,316	1,955,403	585,161	465,458	174,389	516,642	874,599
9	8,613,603	4,507,940	183,690	79,491	2,801,066	674,962	319,329	101,026	47,354	44,489	256,633
10	[3]868,149,512	301,397,275	7,404,731	5,674,852	197,681,366	48,367,825	6,426,867	16,385,640	6,707,325	6,010,603	8,738,066
11	[3]161,447,679	53,921,854	1,750,002	1,025,222	26,771,442	12,756,369	892,714	3,676,765	856,871	3,005,917	3,186,652
12	[3]59,854,796	20,353,826	736,347	365,174	14,792,686	1,868,301	552,563	596,741	176,404	302,392	963,218
13	[3]117,469,953	68,861,985	2,059,892	1,054,553	46,410,023	8,597,342	1,327,904	3,579,653	287,641	2,443,378	3,101,699
14	[3]130,794,621	52,775,492	1,314,421	953,599	28,147,326	9,972,231	4,271,108	4,050,106	2,000,314	511,673	1,554,714
15	[3]13,042,748	5,614,672	196,843	74,460	3,128,028	892,724	458,047	445,186	63,691	45,361	310,332
16	[3]179,252,951	39,209,773	705,515	887,185	12,160,563	6,893,500	2,091,706	10,765,709	2,851,143	2,192,008	662,444
17	[3]8,760,791	13,750,697	323,843	222,124	10,898,186	1,313,846	225,912	349,840	43,855	42,470	330,621
18	[3]61,843,479	27,744,999	999,550	282,030	14,436,037	6,227,315	2,230,417	1,954,723	159,321	297,380	1,158,226
19	1,058,649	570,140	34,372	28,217	364,321	95,352	12,835	10,647	4,300	1,326	18,771
20	34,388,578	5,302,165	128,589	96,638	3,309,003	1,128,551	425,942	6,276	105,261	12,050	90,865
21	222,428	260,049	12,900	3,745	169,937	35,474	22,019	1,551	414	5,693	8,416
22	[3]41,821,529	15,868,219	401,336	287,646	9,650,415	2,052,340	268,343	1,665,839	148,155	397,803	996,342
23	959,078	508,937	61,900	8,115	217,727	152,054	26,378	4,392	1,624	5,800	30,947
24	[3]25,169,678	5,006,157	196,609	131,838	3,339,682	478,555	104,156	133,786	88,559	8,303	524,669
25	56,757,141	8,967,896	373,104	256,440	5,265,761	1,203,463	488,156	419,603	150,941	119,613	690,815
26	[3]221,659,945	71,658,910	2,202,851	1,639,305	36,026,592	12,652,222	1,213,029	7,806,428	971,405	4,576,543	4,570,535
27	[3]6,088,434	1,436,829	83,028	43,774	868,947	157,336	107,148	20,212	7,689	37,586	111,109
28	[3]1,209,390	1,034,823	55,065	27,175	626,429	124,618	117,899	10,336	10,783	6,680	55,838
29	11,475,710	2,064,236	146,888	43,018	1,278,159	254,021	146,666	68,717	13,236	1,903	121,628
30	[3]20,794,901	5,909,532	366,194	129,665	2,350,854	738,946	1,223,035	197,792	70,493	217,691	614,962
31	[3]27,544,519	11,745,588	673,859	301,159	7,834,851	1,325,286	219,139	422,706	96,354	186,480	685,754
32	[3]33,947,377	12,066,648	612,239	379,567	7,378,022	1,678,932	645,471	618,127	94,920	60,472	598,898
33	[3]87,268,431	22,506,390	948,697	739,986	14,276,707	2,644,966	1,049,318	333,828	185,578	773,785	1,553,525
34	[3]7,331,017	4,324,685	163,222	75,965	3,031,333	370,522	139,412	194,523	18,405	121,476	209,828
35	[3]13,207,232	6,641,555	148,386	178,645	872,627	866,656	726,971	496,198	67,501	62,440	3,222,131
36	[3]70,912,464	21,156,030	974,264	369,828	7,790,011	5,060,995	385,645	2,786,500	308,497	2,165,717	1,314,573
37	[3]20,102,169	8,333,378	371,520	178,787	4,053,758	1,887,087	276,944	917,799	62,653	156,496	428,334
38	[3]185,776,919	48,026,349	821,369	701,846	22,166,735	16,755,595	3,674,085	1,823,391	466,191	503,731	1,123,406
39	80,998,764	9,652,288	432,344	108,246	5,348,089	2,383,373	412,813	29,687	164,935	320,197	452,604
40	[3]12,663,868	9,448,025	329,140	197,923	6,427,266	1,465,331	396,444	108,334	63,701	80,967	378,919
41	170,439,166	41,060,260	1,713,422	705,298	19,663,445	10,888,883	2,066,943	1,018,123	572,511	3,145,334	1,286,301
42	47,675,696	6,202,242	285,929	231,225	3,818,807	938,630	283,484	79,110	46,916	162,683	355,458
43	176,817,826	33,719,316	926,943	545,030	15,969,706	8,331,586	5,945,926	9,256	454,119	409,696	1,127,054
44	97,983,800	18,320,557	851,410	459,522	9,848,661	4,483,488	1,151,700	72,111	234,524	380,291	838,850
45	156,607,108	17,537,205	885,098	315,288	7,335,153	5,785,064	1,441,041	329,235	257,476	317,447	871,403
46	[3]21,305,841	8,674,564	309,236	136,693	6,378,923	1,022,591	255,065	142,239	103,356	62,741	263,720
47	20,526,593	1,776,206	144,136	42,056	994,596	325,135	115,336	17,435	16,160	20,924	100,428
48	284,838,487	61,251,185	2,551,869	826,936	21,152,836	26,816,129	3,013,971	2,848,061	626,456	783,973	2,630,954
49	2,037,031	226,215	10,380	2,934	97,597	84,597	6,156	17,300	1,436	....	5,815
50	47,749,164	13,220,200	369,876	38,634	6,411,340	2,635,011	267,945	1,527,995	7,085	1,645,063	317,261
51	45,700	19,760	....	....	14,058	3,824	1,547	208	125	....	....
52	34,605	5,692	....	....	3,851	270	120	257	411	59	724

---

[5] Includes nonproducing operators as follows: Florida, 2; Georgia, 1; Louisiana, 2; Maryland, 2; Massachusetts, 1; Nebraska, 1; New Hampshire, 1; New Jersey 1; South Carolina,1.

TABLE 4.—ALL MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, PERSONS

	STATE.	PERSONS ENGAGED IN MINING INDUSTRIES.												
		Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners December 15, or nearest representative day.					
			Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Aggregate.			Men 16 years of age and over.		
				Total.	Performing manual labor.				Total.	Above ground.	Below ground.	All classes.		
												Total.	Above. ground.	Below ground.
1	**Continental United States**	[1] 1,166,948	[1] 54,888	33,691	9,837	[1] 6,169	[1] 15,008	[1] 25,298	1,086,782	375,281	711,601	1,078,608	370,227	708,382
	NEW ENGLAND:													
2	Maine	2,718	171	99	61	17	55	47	2,500	2,477	23	2,500	2,477	23
3	New Hampshire	1,610	75	42	17	5	28	15	1,520	1,492	28	1,518	1,490	28
4	Vermont	8,940	320	169	64	41	110	202	8,418	7,973	445	8,402	7,957	445
5	Massachusetts	3,805	222	121	43	28	73	75	3,508	3,428	80	3,493	3,413	80
6	Rhode Island	737	37	18	7	7	12	23	677	674	3	677	674	3
7	Connecticut	1,851	125	76	29	7	42	36	1,690	1,545	145	1,680	1,535	145
	MIDDLE ATLANTIC:													
8	New York	14,253	2,651	2,303	665	114	234	286	11,316	9,282	2,034	11,308	9,275	2,033
9	New Jersey	7,176	227	96	14	41	90	148	6,801	4,440	2,361	6,795	4,434	2,361
10	Pennsylvania	406,274	13,574	9,234	2,119	951	3,389	7,398	385,302	110,520	274,782	380,796	106,874	273,922
	EAST NORTH CENTRAL:													
11	Ohio	62,902	4,341	3,069	571	455	817	1,356	57,205	16,794	40,411	56,988	16,761	40,227
12	Indiana	31,325	3,260	2,629	181	264	367	474	27,591	7,294	20,297	27,529	7,285	20,244
13	Illinois	86,495	2,657	1,436	401	382	839	1,310	82,528	15,090	67,438	82,432	15,084	67,348
14	Michigan	42,970	719	118	75	169	432	1,113	41,138	14,427	26,711	41,060	14,362	26,698
15	Wisconsin	6,786	416	232	107	57	127	105	6,265	3,902	2,363	6,259	3,896	2,363
	WEST NORTH CENTRAL:													
16	Minnesota	20,162	662	171	99	65	326	955	18,645	11,559	7,086	18,641	11,555	7,086
17	Iowa	20,021	700	451	298	85	164	229	19,092	3,169	15,923	18,967	3,163	15,804
18	Missouri	32,726	2,531	1,854	1,078	174	503	338	29,857	10,649	19,208	29,789	10,605	19,184
19	North Dakota	960	79	51	19	6	22	21	860	202	658	859	202	657
20	South Dakota	4,169	94	39	13	13	42	51	4,024	2,057	1,967	4,018	2,051	1,967
21	Nebraska	527	28	16	4	3	9	8	491	491	....	489	489	....
22	Kansas	18,259	1,384	1,075	576	88	221	378	16,497	4,358	12,139	16,477	4,342	12,135
	SOUTH ATLANTIC:													
23	Delaware	671	30	9	4	6	15	13	628	628	....	625	625	....
24	Maryland	8,201	279	101	48	52	126	177	7,745	2,841	4,904	7,556	2,795	4,761
25	Virginia	17,777	344	88	15	82	174	378	17,055	8,780	8,275	16,801	8,645	8,156
26	West Virginia	83,062	2,257	918	81	394	945	2,180	78,625	23,904	54,721	77,777	23,779	53,998
27	North Carolina	3,175	247	176	66	12	59	38	2,890	2,320	570	2,867	2,299	568
28	South Carolina	2,079	45	13	3	11	21	20	2,014	1,996	18	1,965	1,947	18
29	Georgia	4 267	186	58	12	45	83	67	4,014	3,537	477	3,862	3,462	400
30	Florida	5,796	173	9	....	52	112	140	5,483	5,431	52	5,479	5,427	52
	EAST SOUTH CENTRAL:													
31	Kentucky	23,455	879	342	75	224	313	496	22,080	5,091	16,989	22,004	5,064	16,940
32	Tennessee	19,092	490	89	24	141	260	459	18,143	7,537	10,606	17,777	7,383	10,394
33	Alabama	32,733	844	78	12	159	607	1,027	30,862	10,833	20,029	30,165	10,481	19,684
	WEST SOUTH CENTRAL:													
34	Arkansas	6,774	226	86	44	44	96	102	6,446	1,598	4,848	6,418	1,582	4,836
35	Louisiana	1,163	131	72	1	27	32	79	953	953	....	952	952	....
36	Oklahoma	15,924	1,378	672	93	242	464	575	13,971	6,215	7,756	13,968	6,215	7,753
37	Texas	7,819	496	284	68	64	148	228	7,095	3,300	3,795	7,081	3,286	3,795
	MOUNTAIN:													
38	Montana	23,271	1,126	776	532	80	270	531	21,614	7,269	14,345	21,608	7,263	14,345
39	Idaho	6,959	1,146	871	297	73	202	99	5,714	1,497	4,217	5,714	1,497	4,217
40	Wyoming	9,357	374	229	26	40	105	189	8,794	1,841	6,953	8,789	1,838	6,951
41	Colorado	29,456	2,168	1,204	318	287	677	651	26,636	8,471	18,165	26,575	8,444	18,131
42	New Mexico	6,603	292	130	49	41	121	242	6,069	2,257	3,812	6,010	2,228	3,782
43	Arizona	18,094	706	309	128	120	277	471	16,917	6,934	9,983	16,911	6,933	9,978
44	Utah	13,360	586	206	57	129	251	378	12,396	4,788	7,608	12,360	4,764	7,596
45	Nevada	8,785	1,103	605	221	156	342	286	7,396	3,557	3,839	7,395	3,556	3,839
	PACIFIC:													
46	Washington	9,257	607	398	67	51	158	168	8,492	2,595	5,897	8,461	2,564	5,897
47	Oregon	1,990	326	215	110	33	78	49	1,615	772	843	1,615	772	843
48	California	31,938	3,934	2,451	1,145	484	999	1,026	26,978	18,381	8,597	26,970	18,375	8,595
49	ALL OTHER STATES[2]	251	12	3	....	1	8	7	232	132	100	227	127	100
50	Alaska	8,025	1,683	1,501	441	32	150	37	6,305	2,564	3,741	6,286	2,548	3,738
51	Hawaii	45	2	2	....	....	....	....	43	43	....	43	43	....
52	Porto Rico	170	14	14	....	....	....	....	156	156	....	156	156	....

---

[1] The following numbers of persons, which could not be distributed by states, are included under the proper headings in the United States totals: Aggregate, 974; salaried officers of corporations, 147; superintendents and managers, 163; and clerks and other subordinate salaried employees, 664.

ENGAGED IN MINING INDUSTRIES, AND POWER FOR THE UNITED STATES, BY STATES: 1909—Continued.

	PERSONS ENGAGED IN MINING INDUSTRIES—continued.															
	Wage earners Dec. 15, or nearest representative day—Continued.												Wage earners employed on 15th day of—			
	Men 16 years of age and over—Continued.									Boys under 16 years of age.			Maximum month.		Minimum month.	
	Engineers, firemen, mechanics, etc.			Miners and miners' helpers.			Quarrymen and stonecutters.	All other employees.		Total.	Above ground.	Below ground.	Month.	Number.	Month.	Number.
	Total.	Above ground.	Below ground.	Total.	Above ground.	Below ground.		Above ground.	Below ground.							
1	**107,315**	**87,181**	**10,134**	**585,805**	**83,642**	**561,563**	**56,449**	**192,955**	**136,685**	**8,173**	**5,054**	**3,119**	Nov	**1,038,768**	Apr.....	**840,000**
2	372	372	....	217	194	23	1,561	350	....	....	....	....	Sept....	2,751	Feb.....	1,188
3	161	159	2	59	33	26	984	314	....	2	2	....	June....	1,693	Jan.....	861
4	633	616	17	1,684	1,260	424	2,690	3,391	4	16	16	....	Aug.....	8,784	Jan.....	7,369
5	461	459	2	105	27	78	2,180	747	....	15	15	....	Sept....	3,850	Jan.....	2,297
6	102	99	3	....	....	....	471	104	....	....	....	....	June....	755	Jan.....	505
7	168	168	....	206	61	145	1,081	225	....	10	10	....	Aug.....	1,761	Feb.....	690
8	1,340	1,298	42	2,097	467	1,630	4,220	3,290	361	8	7	1	Sept....	11,279	Jan.....	6,932
9	641	583	58	2,793	850	1,943	1,017	1,984	360	6	6	....	Oct.....	7,055	Jan.....	5,349
10	26,181	22,115	4,066	210,354	3,795	206,559	8,622	72,342	63,297	4,506	3,646	860	Dec.....	375,446	Apr.....	350,031
11	5,918	5,662	256	33,296	52	33,244	4,235	6,812	6,727	217	33	184	Nov.....	56,413	Apr.....	47,429
12	2,730	2,646	84	17,216	45	17,171	2,214	2,380	2,989	62	9	53	Nov.....	26,279	June....	22,035
13	7,545	6,806	739	53,882	192	53,690	2,164	5,922	12,919	96	6	90	Dec.....	78,342	June....	66,570
14	5,080	4,865	215	20,698	213	20,485	640	8,644	5,998	78	65	13	Oct.....	40,935	Apr.....	38,980
15	674	634	40	2,190	149	2,041	1,782	1,331	282	6	6	....	Sept....	5,694	Jan.....	3,245
16	2,939	2,884	55	5,813	351	5,462	1,495	6,825	1,569	4	4	....	Oct.....	18,952	Jan.....	13,739
17	824	672	152	13,169	20	13,149	626	1,845	2,503	125	6	119	Dec.....	18,310	June....	14,755
18	3,551	3,401	150	17,027	528	16,499	1,865	4,811	2,535	68	44	24	Dec.....	26,481	Apr.....	21,228
19	51	45	6	581	....	581	....	167	70	1	....	1	Dec.....	851	June....	324
20	409	383	26	1,275	29	1,246	164	1,475	695	6	6	....	Sept....	3,984	Dec.....	1,706
21	25	25	....	16	16	....	241	207	....	2	2	....	Sept....	481	Feb.....	142
22	1,169	1,044	125	10,338	11	10,327	902	2,385	1,683	20	16	4	Dec.....	15,558	May....	12,639
23	61	61	....	18	18	....	458	88	....	3	3	....	Aug.....	722	Jan.....	196
24	407	365	42	4,144	240	3,904	1,098	1,092	815	189	46	143	Dec.....	7,432	Feb.....	6,981
25	1,809	1,619	190	8,266	2,082	6,184	997	3,947	1,782	254	135	119	Dec.....	16,561	Feb.....	14,563
26	9,885	9,035	850	40,881	82	40,799	1,367	13,295	12,349	848	125	723	Nov	78,328	Mar	70,300
27	235	202	33	695	171	524	1,011	915	11	23	21	2	Nov	2,526	Jan.....	1,905
28	208	208	....	626	608	18	138	993	....	49	49	....	Sept....	2,015	Apr.....	1,568
29	373	373	....	1,170	783	387	1,051	1,255	13	152	75	77	Dec.....	3,772	May.....	2,793
30	796	796	....	2,259	2,207	52	381	2,043	....	4	4	....	Jan.....	5,697	Oct.....	5,224
31	1,307	1,163	144	14,942	266	14,676	1,287	2,348	2,120	76	27	49	Dec.....	20,756	June....	16,619
32	1,193	1,007	186	9,926	1,614	8,312	2,161	2,601	1,896	366	154	212	Nov.....	17,472	May.....	15,918
33	3,124	2,625	499	16,005	611	15,394	724	6,521	3,791	697	352	345	Dec.....	31,656	June....	26,441
34	486	444	42	4,237	372	3,865	319	447	929	28	16	12	Nov.....	6,089	Apr.....	3,260
35	494	494	....	....	....	....	71	387	....	1	1	....	Jan.....	1,016	Mar.....	860
36	3,423	3,291	132	5,929	106	5,823	748	2,070	1,798	3	....	3	Dec.....	13,462	Apr.....	10,446
37	1,379	1,346	33	3,434	118	3,316	479	1,343	446	14	14	....	Oct.....	6,744	June....	6,264
38	2,040	1,805	235	14,010	513	13,497	189	4,756	613	6	6	....	Nov.....	21,207	Jan.....	18,770
39	600	489	111	4,089	380	3,709	43	585	397	....	....	....	Aug.....	4,589	Jan.....	3,833
40	596	539	57	5,663	243	5,420	17	1,039	1,474	5	3	2	Dec.....	8,601	July.....	7,388
41	2,757	2,392	365	15,835	597	15,238	911	4,544	2,528	61	27	34	Dec.....	25,221	May.....	21,228
42	543	423	120	3,421	154	3,267	221	1,430	395	59	29	30	Sept....	5,882	Jan.....	4,737
43	2,150	1,789	361	9,806	657	9,149	140	4,347	468	6	1	5	Nov.....	15,792	Jan.....	14,233
44	1,775	1,538	237	7,157	809	6,348	222	2,195	1,011	36	24	12	Aug.....	11,457	Feb.....	10,451
45	1,094	1,010	84	3,918	444	3,474	2	2,100	281	1	1	....	Aug.....	6,179	Feb.....	5,444
46	672	592	80	4,998	101	4,897	766	1,105	920	31	31	....	Oct.....	8,031	Jan.....	6,742
47	233	207	26	1,048	237	811	85	243	6	....	....	....	Oct.....	1,380	Jan.....	981
48	8,660	8,391	269	9,553	1,877	7,676	2,409	5,698	650	8	6	2	Dec.....	24,155	Feb.....	20,507
49	41	41	....	159	59	100	....	27	....	5	5	....	....	....	....	....
50	737	713	24	4,701	1,142	3,559	....	693	155	19	16	3	Aug.....	5,444	Dec.....	2,247
51	4	4	....	33	33	....	2	4	....	....	....	....	Dec.....	41	Mar.....	23
52	1	1	....	....	....	....	94	61	....	....	....	....	June....	85	Jan.....	4

---

[2] Includes nonproducing operators as follows: Florida, 2; Georgia, 1; Louisiana, 2; Maryland, 2; Massachusetts, 1; Nebraska, 1; New Hampshire, 1; New Jersey, 1; South Carolina, 1.

Table 4.—ALL MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, PERSONS ENGAGED IN MINING INDUSTRIES, AND POWER FOR THE UNITED STATES, BY STATES: 1909—Continued.

	STATE.	PRIMARY POWER.										ELECTRIC MOTORS RUN BY CURRENT GENERATED BY THE ENTEPRISE USING.	
		Aggregate horsepower.	Owned.							Electric motors operated by purchased current.			
			Total horsepower.	Steam engines.		Gas or gasoline engines.		Water wheels.[1]					
				Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.
1	**Continental United States**	**4,699,910**	**4,483,807**	**71,801**	**3,840,923**	**23,769**	**528,264**	**1,220**	**114,620**	**5,070**	**218,103**	**14,342**	**507,624**
	New England:												
2	Maine	8,196	7,726	160	7,496	13	130	2	100	8	470	14	221
3	New Hampshire	3,771	3,137	86	3,037	4	100			17	634		
4	Vermont	26,576	24,498	468	17,144	7	310	36	7,044	61	2,078	199	5,925
5	Massachusetts	15,031	14,578	316	13,310	14	700	6	568	13	453	28	676
6	Rhode Island	2,350	2,350	70	2,315	1	35						
7	Connecticut	6,298	6,123	144	6,032	3	41	2	50	3	175	1	10
	Middle Atlantic:												
8	New York	101,759	91,076	2,283	68,594	1,216	18,213	38	4,269	147	10,683	81	2,319
9	New Jersey	18,048	17,818	254	17,585	10	193	1	40	5	230	58	2,955
10	Pennsylvania	1,621,172	1,606,365	30,419	1,462,859	8,183	143,473	2	33	412	14,807	4,852	172,390
	East North Central:												
11	Ohio	294,813	292,056	4,777	193,844	4,022	98,212			123	2,757	1,237	37,298
12	Indiana	95,304	94,676	1,259	72,204	945	22,472			27	628	286	10,026
13	Illinois	226,344	222,962	2,462	186,373	1,626	36,589			76	3,382	342	14,567
14	Michigan	278,684	276,167	1,663	259,669	12	178	26	16,320	72	2,517	294	17,916
15	Wisconsin	26,885	26,182	436	23,738	83	1,539	6	905	20	703	74	1,267
	West North Central:												
16	Minnesota	153,693	152,055	1,567	151,887	15	168			19	1,538	132	4,733
17	Iowa	24,228	23,935	454	23,040	86	825	1	70	10	293	47	1,767
18	Missouri	111,007	107,684	2,090	96,467	187	11,108	5	109	69	3,323	356	11,019
19	North Dakota	2,025	2,025	37	2,014	2	11					26	565
20	South Dakota	16,408	12,591	70	11,760	7	96	4	735	146	3,817	30	716
21	Nebraska	815	815	17	805	1	10						
22	Kansas	67,168	66,480	671	34,269	305	31,917	4	294	13	688	48	1,607
	South Atlantic:												
23	Delaware	1,480	1,330	28	1,330					2	150		
24	Maryland	18,118	17,615	352	17,262	3	43	5	310	27	503	40	1,273
25	Virginia	35,812	35,642	489	34,432	6	77	9	1,133	9	170	327	10,577
26	West Virginia	417,409	411,357	8,029	328,412	3,350	82,935	2	10	233	6,052	2,613	89,439
27	North Carolina	6,368	5,998	121	5,718			6	280	10	370	5	28
28	South Carolina	7,012	7,012	147	6,945	4	67						
29	Georgia	10,698	10,430	182	9,268	5	62	12	1,100	3	268	3	80
30	Florida	42,366	42,366	434	38,894	22	3,472					220	12,315
	East South Central:												
31	Kentucky	63,243	52,098	755	48,566	175	3,532			37	1,145	355	11,756
32	Tennessee	34,708	34,608	464	34,377	27	231			1	100	275	14,725
33	Alabama	92,254	91,591	861	91,182	12	109	1	300	15	663	397	12,204
	West South Central:												
34	Arkansas	14,260	14,150	193	14,063	4	87			4	110	42	1,971
35	Louisiana	8,445	8,445	249	8,250	10	195						
26	Oklahoma	95,439	94,999	2,296	69,454	1,294	25,545			10	440	33	1,722
37	Texas	32,668	32,668	1,121	30,230	146	2,438					3	200
	Mountain:												
38	Montana	179,452	139,488	370	123,558	20	232	45	15,698	521	39,964	128	4,501
39	Idaho	31,330	20,788	111	4,611	35	520	119	15,657	168	10,542	54	1,430
40	Wyoming	31,476	30,851	221	30,313	18	348	1	190	8	625	90	2,514
41	Colorado	110,180	83,192	1,048	71,691	47	633	98	10,868	799	26,488	379	14,955
42	New Mexico	17,431	15,931	158	15,417	33	514			44	1,500	245	5,161
43	Arizona	55,773	51,676	376	46,020	231	5,656			119	4,097	240	7,122
44	Utah	51,171	40,282	252	36,867	63	1,242	21	2,173	278	10,889	177	12,016
45	Nevada	32,199	17,967	120	10,470	295	6,931	8	566	459	14,232	151	4,044
	Pacific:												
46	Washington	24,440	23,725	254	20,837	32	468	25	2,420	28	715	194	6,386
47	Oregon	12,614	10,493	97	4,388	12	235	68	5,870	48	2,121	28	1,574
48	California	181,064	135,781	3,354	82,326	1,221	26,012	675	27,443	1,006	45,283	179	5,406
49	All Other States[2]	2,025	2,025	17	1,600	2	360	2	65			9	260
50	Alaska	22,347	22,307	539	14,196	61	737	53	7,374	2	40	17	381
51	Hawaii	197	197	1	125	3	72						
52	Porto Rico	25	25	1	25								

---

[1] Includes 128 water motors with an aggregate horsepower of 7,955.

[2] Includes nonproducing operators as follows: Florida, 2; Georgia, 1; Louisiana, 2; Maryland, 2; Massachusetts, 1; Nebraska, 1; New Hampshire, 1; New Jersey, 1; and South Carolina, 1.

TABLE 5.—NUMBER OF WAGE EARNERS EMPLOYED EACH MONTH IN PRODUCING AND NONPRODUCING ENTERPRISES, BY INDUSTRIES: 1909.

[The month of maximum employment for each industry is indicated by boldface type and that of minimum employment by italics.]

INDUSTRY.	NUMBER OF WAGE EARNERS EMPLOYED ON 15TH DAY OF—												Per cent minimum is of maximum.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries	**949,860**	**946,498**	**954,286**	**840,000**	**948,148**	**982,794**	**975,819**	**985,708**	**1,007,932**	**1,028,876**	**1,038,768**	**1,029,595**	**90.5**
FUELS:													
Coal, anthracite	173,059	172,775	**173,297**	168,295	168,402	169,261	167,731	*166,063*	166,351	170,302	170,925	169,492	95.8
Coal, bituminous	518,451	513,878	506,935	482,049	*478,648*	484,179	492,341	501,750	519,648	535,440	550,250	**560,672**	85.4
Petroleum and natural gas	34,714	*34,124*	34,602	35,614	36,620	37,566	38,262	38,754	39,023	40,156	**41,099**	40,710	83.0
Peat	*53*	57	92	110	149	**199**	170	170	92	94	74	87	26.6
METALS:													
Iron	*43,746*	44,373	44,795	43,897	46,029	46,589	48,254	49,326	50,748	51,639	**51,864**	51,326	84.7
Copper	51,424	51,490	52,074	51,915	52,772	52,206	52,671	52,410	52,866	**53,905**	53,379	*50,851*	94.3
Precious metals—													
Deep mines	*35,539*	35,664	36,821	37,459	38,699	39,730	40,622	41,156	41,189	**41,487**	41,104	38,641	85.7
Placer mines	*2,926*	2,951	2,984	3,305	3,689	3,708	**3,769**	3,526	3,685	3,516	3,381	3,301	77.8
Lead and zinc	*15,448*	16,812	15,783	16,139	16,476	17,275	17,176	16,945	17,685	17,959	18,311	**18,540**	83.3
Quicksilver	608	*570*	582	579	616	644	645	636	663	615	607	**701**	81.3
Manganese	56	*50*	51	52	78	78	78	**90**	86	86	86	87	55.6
Tungsten	145	138	142	149	177	183	174	200	208	202	209	**242**	57.0
STRUCTURAL MATERIALS:													
Limestone	*17,912*	18,238	23,130	29,095	32,206	34,023	35,299	36,335	**37,262**	36,889	34,784	28,805	48.1
Granite	*13,732*	14,110	16,304	18,844	19,833	20,848	21,435	21,633	**21,908**	21,088	19,332	15,909	62.7
Sandstone	*4,763*	4,866	6,419	8,873	9,631	9,767	**9,888**	9,733	9,529	9,122	8,562	6,860	48.2
Marble	*5,532*	5,660	5,940	6,213	6,424	6,400	**6,492**	6,423	6,440	6,355	6,244	6,326	85.2
Slate	*7,881*	7,896	8,234	8,700	8,883	9,318	9,377	9,356	**9,397**	9,304	8,927	8,963	83.9
Traprock	2,585	*2,486*	3,719	5,025	5,802	6,191	6,509	6,515	**6,698**	6,396	5,947	5,205	37.1
Bluestone	*743*	786	1,147	1,928	2,159	**2,248**	2,153	2,152	2,009	1,920	1,539	947	33.1
MISCELLANEOUS:													
Asbestos	37	37	*36*	45	59	69	74	78	82	84	86	**88**	40.9
Asphaltum and bituminous rock	*165*	206	201	198	211	178	228	**282**	226	196	200	210	58.5
Barytes	186	*165*	197	219	228	281	**298**	285	267	240	262	256	55.4
Bauxite	*404*	409	487	452	491	490	587	679	680	673	**723**	680	55.9
Clay	*2,793*	2,877	3,107	3,284	3,312	3,347	3,391	3,470	**3,481**	3,387	3,418	3,375	80.2
Corundum and emery	[1] *5*	8	6	6	5	7	13	[1] **15**	15	8	8	8	33.3
Feldspar	*206*	224	207	247	279	272	275	260	254	**284**	237	229	72.5
Fluorspar	306	308	328	339	*214*	315	322	216	275	**348**	288	290	61.5
Fuller's earth	**381**	352	327	338	328	316	313	307	307	328	328	*304*	79.8
Garnet	*61*	63	62	70	103	104	115	107	[1] **139**	139	120	82	43.9
Graphite	272	271	*261*	281	308	361	**387**	307	298	346	372	350	67.4
Grindstones	316	*309*	367	449	**498**	480	465	466	439	462	420	404	62.3
Buhrstones and millstones	**57**	52	55	53	52	52	*39*	42	54	53	53	51	68.4
Gypsum	*3,132*	3,176	3,306	3,541	3,531	3,637	3,469	3,515	3,548	**3,697**	3,569	3,503	84.7
Infusorial earth	54	55	*52*	58	55	55	54	67	59	63	**75**	70	69.3
Magnesite	55	*44*	47	45	50	58	**71**	60	61	59	58	58	62.0
Marl	[1] *21*	25	40	33	21	38	21	28	**43**	34	37	28	48.8
Mica	202	231	*188*	261	236	276	346	354	**364**	343	324	288	51.6
Mineral pigments	*89*	101	130	147	152	166	179	**184**	159	170	183	179	48.4
Monazite and zircon	10	26	10	22	10	[1] *4*	23	23	4	23	[1] **27**	27	14.8
Oilstones, scythestones, and whetstones	153	*149*	166	183	**196**	188	161	172	175	163	165	170	76.0
Phosphate rock	**9,136**	8,020	8,083	7,928	7,862	7,921	8,131	7,944	7,927	*7,635*	7,764	7,727	93.8
Precious stones	**111**	106	106	107	99	96	*82*	88	89	94	87	94	73.9
Pumice	[1] *8*	8	11	11	12	11	12	17	**24**	22	22	18	33.3
Pyrite	1,092	1,093	1,162	1,126	1,165	**1,204**	1,187	1,085	*1,050*	1,060	1,089	1,068	87.2
Quartz	174	159	181	**200**	194	173	174	*123*	132	130	147	151	61.5
Sulphur	**390**	349	352	*348*	361	374	364	353	354	386	374	388	88.7
Talc and soapstone	*1,164*	1,174	1,173	1,167	1,199	1,260	1,333	1,391	**1,414**	1,319	1,284	1,192	82.3
Tripoli	56	57	58	57	57	[1] *55*	**59**	57	57	58	57	55	93.2
ALL OTHER INDUSTRIES [2]	*509*	518	529	548	575	593	**604**	569	580	596	567	589	84.3

---

[1] Same number reported for one or more other months.

[2] All other industries embrace: Antimony, bismuth, borax, chromite, lithium, lithographic stone, manganiferous iron, molybdenum, nickel and cobalt, tin, titanium uranium, and vanadium.

TABLE 6.—NUMBER OF WAGE EARNERS EMPLOYED EACH MONTH IN PRODUCING AND NONPRODUCING ENTERPRISES, BY STATES: 1909.

[The month of maximum employment for each state and division is indicated by bold face type and that of minimum employment by italics.]

DIVISION AND STATE.	NUMBER OF WAGE EARNERS EMPLOYED ON THE 15TH DAY OF—												Percent minimum is of maximum.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States	**949,860**	**946,496**	**954,286**	**940,000**	**849,148**	**962,794**	**975,813**	**985,706**	**1,007,932**	**1,028,876**	**1,038,758**	**1,029,596**	**90.5**
Geographic Divisions:													
New England	*13,150*	13,252	14,734	16,978	18,373	18,971	19,404	19,381	**19,462**	18,887	17,729	15,306	67.6
Middle Atlantic	365,598	366,202	370,120	*364,970*	368,917	376,537	378,630	379,667	382,381	389,631	**391,602**	390,194	93.2
East North Central	187,942	187,264	188,714	*181,813*	183,192	182,141	186,523	189,241	197,346	202,271	**206,477**	203,009	88.1
West North Central	72,598	72,888	72,909	*69,049*	70,756	73,870	74,969	76,413	79,586	82,189	**83,210**	80,673	83.0
South Atlantic	105,803	105,162	*105,038*	106,099	105,637	108,243	109,201	111,309	113,229	113,466	**115,725**	115,236	90.8
East South Central	63,494	61,518	62,030	60,777	59,591	*59,001*	60,390	61,375	63,953	66,515	67,814	**69,723**	84.6
West South Central	24,164	23,216	22,280	*21,112*	21,192	22,370	23,779	24,489	25,426	26,638	26,579	**27,081**	78.0
Mountain	88,791	*88,568*	89,341	89,265	90,560	90,652	91,221	91,988	93,434	95,828	**96,489**	95,165	91.8
Pacific	*28,320*	28,426	29,120	29,937	30,930	31,009	31,696	31,843	33,115	**33,450**	33,133	33,208	84.7
New England:													
Maine	1,352	*1,188*	1,524	1,891	2,345	2,577	2,688	2,628	**2,751**	2,551	2,452	2,079	43.2
New Hampshire	*861*	962	1,108	1,525	1,672	**1,693**	1,659	1,659	1,611	1,585	1,519	1,163	50.9
Vermont	*7,369*	7,555	7,802	8,144	8,385	8,618	8,771	**8,784**	8,765	8,601	8,171	7,419	83.8
Massachusetts	*2,306*	2,333	2,681	3,291	3,660	3,594	3,806	3,802	**3,861**	3,751	3,438	3,078	59.7
Rhode Island	*505*	524	635	733	**755**	**755**	731	747	717	718	632	523	66.9
Connecticut	757	*690*	984	1,394	1,556	1,734	1,749	**1,761**	1,757	1,681	1,517	1,044	39.2
Middle Atlantic:													
New York	*5,932*	6,081	7,057	8,844	10,037	10,567	10,904	11,223	**11,279**	11,068	10,264	8,540	52.6
New Jersey	*5,349*	5,469	5,679	6,095	6,418	6,539	6,730	6,805	6,883	**7,058**	6,646	6,208	75.8
Pennsylvania	354,317	354,652	357,384	*350,031*	352,462	359,431	360,996	361,639	364,219	371,507	374,692	**375,448**	93.2
East North Central:													
Ohio	48,085	47,900	48,330	*47,429*	47,960	48,861	49,768	51,699	52,974	53,294	**56,413**	54,142	84.1
Indiana	22,612	22,642	23,274	22,369	22,777	*22,035*	23,527	24,419	25,909	26,272	**26,279**	25,310	83.8
Illinois	74,994	74,299	73,722	68,489	68,128	*66,570*	67,503	67,213	72,105	76,124	78,086	**78,342**	85.0
Michigan	39,006	38,995	39,487	*38,980*	39,395	39,571	40,185	40,415	40,664	**40,935**	40,384	40,526	95.2
Wisconsin	*3,245*	3,428	3,901	4,546	4,932	5,104	5,540	5,495	**5,694**	5,646	5,315	4,689	57.0
West North Central:													
Minnesota	*13,739*	14,192	14,500	14,958	17,241	17,778	18,219	18,334	18,567	**18,952**	18,601	17,444	72.5
Iowa	17,334	17,325	17,018	15,534	15,088	*14,755*	15,046	15,775	16,729	17,482	18,110	**18,310**	80.6
Missouri	22,560	22,585	22,732	*21,228*	21,394	22,763	22,932	23,405	24,686	25,403	26,017	**26,481**	80.2
North Dakota	742	727	627	414	351	*324*	387	394	454	719	756	**851**	38.1
South Dakota	3,532	3,406	3,496	3,650	3,652	3,704	3,850	3,957	**3,984**	3,878	3,823	*1,706*	42.8
Nebraska	181	*145*	238	379	391	413	442	433	**484**	433	358	323	30.0
Kansas	14,510	14,508	14,298	12,886	*12,639*	14,133	14,093	14,115	14,682	15,322	15,545	**15,558**	81.2
South Atlantic:													
Delaware	*196*	235	391	534	554	631	641	**722**	693	614	449	257	27.1
Maryland	7,003	*6,981*	7,080	7,105	7,121	7,251	7,290	7,198	7,417	7,489	7,524	**7,539**	92.6
Virginia	14,658	*14,563*	14,589	14,830	14,864	15,356	15,474	15,916	15,768	15,615	16,151	**16,581**	87.9
West Virginia	71,133	70,622	*70,300*	71,243	71,120	72,301	72,571	74,029	75,874	76,638	**78,328**	77,528	89.7
North Carolina	*1,905*	2,057	2,048	2,035	2,041	2,234	2,298	2,440	2,462	2,487	**2,526**	2,384	75.4
South Carolina	1,932	1,821	1,610	*1,570*	1,677	1,739	1,979	1,929	**2,017**	1,835	1,812	1,870	77.8
Georgia	3,240	3,204	3,343	3,306	*2,828*	3,319	3,446	3,645	3,628	3,560	3,635	**3,777**	74.9
Florida	**5,736**	5,679	5,677	5,476	5,432	5,412	5,502	5,430	5,370	*5,228*	5,300	5,320	91.1
East South Central:													
Kentucky	18,021	17,956	17,577	17,093	16,711	*16,619*	17,351	17,974	19,013	20,147	20,573	**20,756**	80.1
Tennessee	16,440	16,052	16,365	16,090	*15,918*	15,941	15,984	15,982	16,440	16,786	**17,472**	17,311	91.1
Alabama	29,033	27,510	28,088	27,594	26,962	*26,441*	27,055	27,419	28,500	29,582	29,769	**31,656**	83.5
West South Central:													
Arkansas	5,307	4,680	4,298	*3,260*	3,420	4,312	4,799	5,469	5,738	5,980	**6,089**	5,937	53.5
Louisiana	**1,041**	998	*885*	969	996	976	933	912	893	961	900	943	85.0
Oklahoma	11,481	11,153	10,739	*10,446*	10,607	10,818	11,484	11,727	12,277	12,953	13,084	**13,462**	77.6
Texas	6,335	6,385	6,358	6,437	6,269	*6,264*	6,563	6,381	6,518	**6,744**	6,506	6,739	92.9
Mountain:													
Montana	*18,770*	18,849	19,222	19,290	19,529	19,243	19,582	19,406	20,006	20,946	**21,207**	18,793	88.5
Idaho	*3,833*	3,875	4,007	4,262	4,396	4,541	4,552	**4,589**	4,446	4,568	4,525	4,300	83.5
Wyoming	8,360	8,301	7,931	7,673	7,498	7,481	*7,388*	7,430	7,751	8,060	8,323	**8,601**	85.9
Colorado	22,639	21,999	22,045	21,311	*21,228*	21,470	21,776	22,163	22,994	24,053	24,444	**25,221**	84.2
New Mexico	*4,737*	5,073	5,002	5,328	5,327	5,414	5,749	5,684	**5,882**	5,618	5,631	5,703	80.5
Arizona	*14,233*	14,576	14,803	14,777	15,673	15,278	14,898	15,080	15,219	15,749	**15,792**	15,670	90.1
Utah	10,586	*10,451*	10,605	10,715	10,751	11,095	11,398	**11,457**	11,286	10,950	10,937	11,220	91.2
Nevada	5,633	*5,444*	5,726	5,909	6,158	6,130	5,878	**6,179**	5,850	5,884	5,630	5,657	88.1
Pacific:													
Washington	*6,742*	6,894	6,855	7,085	7,407	7,521	7,501	7,439	7,862	**8,031**	7,955	7,749	83.9
Oregon	*981*	1,025	1,111	1,058	1,114	1,087	1,062	1,133	1,270	**1,380**	1,366	1,304	71.1
California	20,597	*20,507*	21,154	21,794	22,409	22,401	23,133	23,271	23,983	24,039	23,812	**24,155**	84.9

Table 7.—PRODUCING MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, UNITED STATES, BY

	INDUSTRY	Number of operators.	Number of mines, quarries, and wells.	Land controlled (acres).	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.						
						Total.	Services.			Supplies, materials, and fuel.		
							Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Supplies and materials.	Purchased ore and natural gas (duplication in product).	Fuel and rent of power.
1	**All industries (U. S.)**	**19,915**	**........**	**24,215,611**	**$3,380,625,841**	**$1,042,642,693**	**$32,823,748**	**$20,589,803**	**$586,774,079**	**$173,411,438**	**$29,318,316**	**$45,138,550**
	FUELS:											
2	Coal, anthracite	192	423	465,134	246,928,078	139,324,467	2,317,223	2,266,081	92,317,659	23,604,740	....	3,193,226
3	Coal, bituminous	3,503	6,013	7,717,615	1,062,197,083	395,907,026	12,724,418	9,076,477	294,196,488	40,064,899	433,801	7,509,947
4	Petroleum and natural gas.	7,793	166,320	12,694,838	683,268,497	135,638,644	4,848,224	2,393,657	27,091,650	39,947,013	9,888,877	1,444,595
5	Peat	10	10	1,629	318,024	96,034	17,178	3,018	40,313	6,490	....	17,974
	METALS:											
6	Iron	176	483	1,313,214	300,735,917	74,071,830	1,749,989	1,639,973	29,731,456	12,597,428	....	4,632,289
7	Copper	161	368	275,598	301,896,296	107,679,212	1,928,167	1,785,861	49,382,979	23,718,373	10,596,964	13,324,157
	Precious metals—											
8	Deep mines	1,604	2,845	374,685	443,715,258	68,764,692	2,816,906	980,474	30,868,371	14,100,617	6,451,627	5,105,253
9	Placer mines	678	880	213,578	56,840,870	6,810,482	359,376	71,397	2,669,574	2,194,444	....	675,602
10	Lead and zinc	977	1,142	125,322	62,627,935	24,453,299	896,722	195,844	10,477,657	4,836,023	1,947,047	2,400,724
11	Quicksilver	12	12	22,837	2,718,812	718,861	63,441	15,140	407,544	130,847	....	54,531
12	Manganese	3	8	3,457	960,000	21,725	4,620	480	11,988	3,461	....	498
13	Tungsten	22	116	7,624	1,468,428	365,780	29,901	3,240	178,345	85,555	....	8,648
14	STRUCTURAL MATERALS	3,988	4,603	341,695	[1] 132,641,780	63,641,585	[2] 3,642,297	[2] 1,504,442	39,661,871	8,800,184	....	3,482,054
15	Limestone	1,665	1,916	128,495	44,089,476	23,875,507	1,227,758	490,238	14,082,185	3,754,125	....	1,507,628
16	Granite	707	826	51,398	25,422,307	16,192,138	741,171	328,361	11,112,195	1,921,912	....	757,078
17	Sandstone	595	677	65,580	15,758,455	6,626,438	398,383	132,086	3,993,340	909,955	....	319,961
18	Marble	77	108	43,445	20,272,755	4,842,835	281,018	102,089	3,079,023	544,327	....	261,689
19	Slate	185	219	19,897	12,177,350	5,831,256	306,899	98,580	4,088,653	521,761	....	327,397
20	Traprock	196	220	18,085	8,745,553	5,090,538	244,777	102,317	2,538,964	1,018,090	....	279,082
21	Bluestone	563	637	14,795	1,299,789	1,182,873	53,052	8,446	767,511	130,014	....	29,219
	MISCELLANEOUS:											
22	Asbestos	5	20	3,045	88,000	72,747	7,940	2,200	31,189	23,120	....	400
23	Asphaltum and bituminous rock.	12	19	7,137	2,557,273	301,673	39,809	4,320	128,977	66,159	....	13,598
24	Barytes	23	42	14,079	472,751	176,967	13,623	6,560	90,310	21,756	....	6,468
25	Bauxite	10	10	14,214	3,023,414	316,221	24,878	7,608	198,273	21,665	....	33,624
26	Buhrstones and millstones.	14	14	506	9,685	18,354	225	....	16,625	483	....	25
27	Clay	261	336	59,053	6,780,077	2,289,198	180,863	44,024	1,361,622	280,953	....	108,389
28	Corundum and emery	4	6	1,553	316,909	7,459	1,044	....	3,675	260	....	....
29	Feldspar	22	28	3,556	505,769	238,896	25,367	3,336	106,653	40,852	....	15,892
30	Fluorspar	13	15	3,434	195,215	319,426	19,649	5,024	168,445	34,695	....	24,414
31	Fuller's earth	16	21	6,644	1,362,427	274,776	33,880	4,470	118,629	35,797	....	48,010
32	Garnet	3	4	5,396	181,858	98,206	3,550	900	40,204	19,491	....	5,795
33	Graphite	19	20	6,984	1,505,768	328,690	23,588	2,426	160,069	69,601	....	35,922
34	Grindstones	13	25	2,604	304,324	339,261	20,572	5,373	148,323	99,470	....	14,562
35	Gypsum	78	222	54,215	10,213,284	4,905,662	288,954	262,935	1,820,877	986,658	....	573,459
36	Infusorial earth	14	16	2,305	147,900	61,083	4,990	120	27,627	4,432	....	9,235
37	Magnesite	6	13	2,369	89,016	62,444	5,338	2,105	32,479	6,282	....	7,556
38	Marl	3	3	2,250	70,146	17,812	2,895	1,030	9,587	1,463	....	1,525
39	Mica	73	78	12,255	1,261,780	182,828	13,570	960	124,658	10,377	....	12,392
40	Mineral pigments	23	26	1,337	386,501	115,860	15,082	1,800	43,974	14,710	....	7,775
41	Monazite and zircon	4	4	50,550	63,000	50,909	3,100	600	5,046	1,750	....	770
42	Oilstones, scythestones, and whetstones.	21	45	3,928	247,478	99,259	4,083	1,000	69,884	4,957	....	6,601
43	Phosphate rock	51	153	340,697	30,642,656	7,421,430	430,523	160,467	3,215,661	898,657	....	1,360,368
44	Precious stones	23	27	2,858	701,945	195,908	36,169	2,700	95,972	30,449	....	1,012
45	Pumice	3	4	320	4,400	6,087	....	90	4,778	539	....	....
46	Pyrite	11	12	9,179	1,717,410	734,355	34,573	20,329	408,419	152,143	....	71,537
47	Quartz	14	14	1,877	343,883	155,418	10,447	2,679	81,648	17,461	....	12,065
48	Sulphur	4	4	6,747	5,293,900	4,638,389	64,290	46,059	324,538	248,383	....	708,384
49	Talc and soapstone	39	46	11,676	8,659,744	1,036,371	71,334	31,678	504,116	196,054	....	66,339
50	Tripoli	4	7	874	170,800	42,493	6,000	840	22,657	7,407	....	2,006
51	ALL OTHER INDUSTRIES [4]	10	27	27,843	6,891,550	740,874	38,950	12,086	373,269	125,340	....	138,929

---

[1] Includes $4,876,095 which can not be distributed among the several industries.

[2] In some cases the same operator conducted two or more quarries producing different kinds of stone, all quarries being managed through one central administrative office. In such instances it was impossible to assign the corporate officers and the central office force to any particular quarry; this was also the case in respect to taxes, which were reported in a lump sum for all properties. The total central office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each, and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for "Structural materials," however, the number of officers and salaried employees, as well as their salaries, and the amount of taxes, appear under the proper heads. The amounts thus included in the item of "Sundry expenses" for individual industries and distributed in the totals for "Structural materials" are as follows: Salaried officers of corporations, superintendents, and managers, $389,239; clerks and other subordinate salaried employees, $242,325; and taxes, $27,767.

VALUE OF PRODUCTS, PERSONS ENGAGED IN MINING INDUSTRIES, AND POWER, FOR THE INDUSTRIES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.							Value of products.	PERSONS ENGAGED IN INDUSTRY.								Primary horsepower.
	Miscellaneous.				Per cent of total.				Aggregate.	Proprietors and officials.				Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.	
	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and other sundry expenses.	Services.	Supplies.	Miscellaneous.			Total.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.			
											Total.	Performing manual labor.				
1	**$63,873,585**	**$17,796,763**	**$28,887,898**	**$43,850,513**	**61.4**	**23.8**	**14.8**	**$1,238,410,322**	**1,139,332**	**49,374**	**29,822**	**8,861**	**19,452**	**24,675**	**1,065,263**	**4,808,253**
2	7,980,739	2,681,877	1,701,514	3,361,408	69.5	19.2	11.3	149,180,471	178,004	1,315	188	72	1,127	3,185	173,504	676,753
3	12,082,488	4,481,816	2,209,672	13,127,020	79.8	12.1	8.1	427,962,464	592,677	11,620	3,739	1,713	7,881	11,268	569,789	1,227,401
4	21,282,820	2,576,986	16,736,510	9,428,312	25.3	37.8	36.9	185,416,684	62,172	19,353	16,213	2,155	3,140	2,988	39,831	1,221,969
5	800	907	....	9,354	63.0	25.5	11.5	109,047	203	15	1	....	14	6	182	1,416
6	15,174,735	3,970,355	2,698,842	1,876,763	44.7	23.3	32.0	106,947,082	55,176	1,109	76	24	1,033	1,837	52,230	346,534
7	1,789,656	1,934,158	644,562	2,574,335	49.3	44.2	6.5	134,616,987	55,258	661	79	42	582	1,454	53,143	376,464
8	1,163,985	1,084,576	3,603,984	2,588,899	50.4	37.3	12.3	83,885,928	37,755	3,359	2,011	951	1,348	780	33,616	200,966
9	141,716	119,369	99,582	479,422	45.5	42.2	12.3	10,237,252	5,436	1,149	951	673	198	88	4,199	27,278
10	2,301,850	167,188	197,259	1,032,985	47.3	37.6	15.1	31,363,094	24,397	2,525	1,947	1,171	578	269	21,603	110,559
11	5,268	6,957	9,878	25,255	67.6	25.8	6.6	868,458	640	27	3	....	24	15	598	784
12	....	678	....	....	78.7	18.2	3.1	20,435	65	7	4	1	3	1	57	175
13	1,375	3,213	40,976	14,527	57.8	25.8	16.4	563,457	227	45	32	20	13	5	177	486
14	1,439,445	[2] 496,235	463,590	[2] 4,151,467	70.4	19.3	10.3	75,992,908	[3] 101,129	[3] 6,744	4,106	1,827	[3] 2,638	[3] 2,035	92,350	303,442
15	488,919	161,117	201,880	1,961,657	66.2	22.0	11.8	29,832,492	41,029	2,645	1,634	640	1,011	689	37,695	125,024
16	194,349	113,097	65,744	958,231	75.2	16.6	8.2	18,997,976	22,211	1,248	730	318	518	402	20,561	61,095
17	97,604	53,075	73,359	648,675	68.3	18.5	13.2	[4] 7,702,423	11,025	913	587	215	326	204	9,908	33,487
18	47,911	70,616	27,344	428,818	71.5	16.6	11.9	6,239,120	6,649	188	49	6	139	148	6,313	21,779
19	271,252	33,192	28,962	154,560	77.1	14.5	8.4	6,054,174	10,121	499	221	70	278	184	9,438	29,777
20	282,501	32,301	60,204	532,302	56.7	25.5	17.8	5,578,317	6,748	317	116	22	201	171	6,260	29,211
21	56,909	5,070	6,097	126,555	70.0	13.5	16.5	1,588,406	3,020	827	769	556	58	18	2,175	3,069
22	45	846	400	6,607	56.8	32.3	10.9	65,140	88	5	....	....	5	4	79	380
23	1,517	5,694	15,546	26,053	57.4	26.4	16.2	466,461	241	20	....	....	20	6	215	826
24	14,232	1,967	14,346	7,705	62.5	15.9	21.6	224,766	372	35	23	11	12	7	330	262
25	6,909	3,993	....	19,271	73.0	17.5	9.5	670,829	726	27	1	....	26	9	690	1,565
26	271	28	....	697	91.8	2.8	5.4	34,441	79	19	18	15	1	....	60	....
27	85,403	25,147	48,068	154,729	69.3	17.0	13.7	2,945,948	4,351	404	244	77	160	76	3,871	8,868
28	708	11	....	1,761	63.3	3.5	33.2	18,185	19	2	....	....	2	....	17	....
29	9,238	1,473	8,681	27,404	56.7	23.7	19.6	271,437	363	28	11	7	17	10	325	993
30	1,917	1,012	949	63,321	60.5	18.5	21.0	288,509	376	27	8	4	19	7	342	1,179
31	582	2,863	67	30,478	57.1	30.5	12.4	315,762	380	27	3	3	24	8	345	1,739
32	6,850	4,869	....	16,547	45.5	25.7	28.8	101,920	120	7	5	2	2	1	112	315
33	5,765	3,401	4,000	23,918	56.6	32.1	11.3	344,130	436	26	2	2	24	6	404	2,647
34	3,348	2,134	25,597	19,882	51.4	33.6	15.0	413,296	430	16	5	2	11	6	408	1,648
35	74,916	39,062	16,558	842,243	48.4	31.8	19.8	5,812,810	4,215	163	6	4	157	274	3,778	17,685
36	735	813	2,430	10,701	53.6	22.4	24.0	75,503	99	23	16	1	7	1	75	316
37	253	252	....	8,179	63.9	22.2	13.9	68,463	84	8	3	2	5	2	74	126
38	....	247	....	1,065	75.8	16.8	7.4	13,307	38	7	4	....	3	2	29	105
39	5,684	852	6,036	8,299	76.1	12.5	11.4	206,794	608	133	116	63	17	2	473	463
40	3,469	1,255	20,388	7,407	52.5	19.4	28.1	151,015	246	35	20	2	15	2	209	849
41	100	303	36,500	2,740	17.2	6.0	77.8	64,472	34	8	6	....	2	1	25	45
42	1,061	1,211	6,622	3,840	75.5	11.7	12.8	206,028	232	25	19	9	6	1	206	448
43	345,568	86,859	251,849	671,478	51.3	30.4	18.3	10,781,192	8,573	214	17	....	197	173	8,186	50,526
44	....	1,746	....	27,860	68.8	16.1	15.1	315,464	145	33	5	....	28	5	107	109
45	190	....	....	490	80.0	8.8	11.2	30,097	25	5	5	3	....	2	18	....
46	887	6,145	2,730	37,592	63.1	30.5	6.4	676,984	1,160	22	4	....	18	27	1,111	5,758
47	2,959	1,512	16,351	10,296	61.0	19.0	20.0	231,025	208	18	7	....	11	6	184	1,219
48	....	53,606	361	3,092,768	9.6	21.1	69.3	4,432,066	460	13	....	....	13	39	408	3,114
49	31,287	15,501	3,550	116,512	58.6	25.3	16.1	1,174,516	1,452	64	16	2	48	52	1,336	9,433
50	2,662	713	....	208	69.4	22.1	8.5	66,557	73	11	4	....	7	2	60	265
51	2,152	8,933	500	40,715	57.3	35.7	7.0	778,938	560	20	4	3	16	13	527	3,141

---

[3] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for building stone: Aggregate, 326; salaried officers of corporations, superintendents, and managers, 107; and clerks and other subordinate salaried employees, 219.

[4] Includes enterprises as follows: Antimony, 1; bismuth, 1; borax, 2; chromite, 2; manganiferous iron, 2; nickel and cobalt, 1; and tin, 1.

TABLE 8.—PRODUCING MINES, QUARRIES, AND WELLS—CAPITAL, EXPENSES, VALUE OF PRODUCTS, PERSONS

	DIVISION AND STATE.	Number of operators.	Number of mines and quarries.	Number of wells.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.						
						Total.	Services.			Supplies, materials, and fuel.		
							Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Supplies and materials.	Purchased ore and natural gas (duplication in product).	Fuel and rent of power.
1	**United States**	[1] 19,916	18,164	188,320	[2] $3,380,525,841	$1,042,842,693	[3] $32,823,748	[3] $20,689,803	$588,774,078	$173,411,438	$29,318,316	$45,138,550
	GEOGRAPHIC DIVISIONS:											
2	New England	510	586	....	27,950,080	14,696,118	603,790	293,492	9,814,166	1,847,736	....	753,714
3	Middle Atlantic	6,333	3,903	71,122	919,992,103	315,473,663	8,066,471	5,961,915	204,992,523	47,736,970	3,164,839	7,327,680
4	East North Central	4,152	2,662	56,379	469,041,901	200,211,992	5,986,494	3,434,660	118,872,711	28,179,361	5,656,650	7,399,712
5	West North Central	2,300	2,603	3,450	321,757,330	101,600,234	2,570,135	1,789,303	60,566,348	15,605,588	1,919,554	5,190,869
6	South Atlantic	1,358	1,652	15,146	341,053,471	98,151,345	3,463,174	2,267,740	49,886,136	14,722,485	893,664	3,418,805
7	East South Central	830	1,109	1,110	145,688,421	46,133,257	2,217,967	1,413,822	29,443,806	5,386,232	170,135	1,912,689
8	West South Central	1,229	452	14,700	110,680,029	40,200,158	1,647,442	802,375	15,671,675	7,922,941	173,100	1,505,758
9	Mountain	1,972	3,728	97	709,074,649	166,586,458	4,863,504	3,004,691	82,081,073	32,190,652	14,577,714	14,509,238
10	Pacific	1,538	1,610	4,316	275,819,077	61,589,468	2,481,872	956,406	25,645,641	19,819,473	2,762,660	3,118,087
	NEW ENGLAND:											
11	Maine	97	102	....	3,825,931	1,876,341	87,779	31,847	1,332,242	219,579	....	84,683
12	New Hampshire	45	53	....	1,546,503	1,204,966	45,619	7,869	926,352	100,931	....	54,427
13	Vermont	137	182	....	13,992,096	6,795,268	227,650	142,587	4,449,315	905,157	....	362,438
14	Massachusetts	139	147	....	5,054,093	2,987,175	153,683	59,675	1,966,997	363,698	....	153,258
15	Rhode Island	21	27	....	567,015	673,877	29,948	27,941	409,883	130,947	....	26,991
16	Connecticut	71	75	....	2,964,442	1,158,491	59,111	23,573	729,377	127,424	....	71,917
	MIDDLE ATLANTIC:											
17	New York	1,351	752	11,342	45,171,232	9,987,768	495,776	212,089	4,717,595	1,886,937	65,656	585,161
18	New Jersey	131	151	....	8,613,663	4,507,940	183,690	79,491	2,801,066	674,962	....	319,329
19	Pennsylvania	4,851	3,000	59,780	866,207,208	300,977,955	7,387,005	5,670,335	197,473,862	45,175,071	3,099,183	6,423,190
	EAST NORTH CENTRAL:											
20	Ohio	1,876	964	35,087	161,324,529	53,852,530	1,749,762	1,025,222	26,769,229	7,360,280	5,376,075	892,871
21	Indiana	1,010	480	10,373	59,764,947	20,312,752	736,347	365,174	14,782,488	1,823,904	22,595	551,821
22	Illinois	915	759	10,918	116,959,707	68,718,121	2,058,102	1,054,553	46,378,727	8,472,837	101,980	1,325,880
23	Michigan	83	173	21	119,331,987	51,819,838	1,255,659	917,963	27,660,908	9,800,415	....	4,193,347
24	Wisconsin	268	286	....	11,860,731	6,508,751	186,724	71,748	3,081,359	721,925	156,000	435,993
	WEST NORTH CENTRAL:											
25	Minnesota	153	250	....	176,950,369	38,574,180	694,277	874,463	11,907,049	6,736,806	....	2,024,606
26	Iowa	373	431	....	8,481,483	13,694,714	320,951	220,024	10,870,446	1,307,919	....	221,740
27	Missouri	1,021	1,224	39	60,549,081	27,515,101	993,190	281,730	14,393,570	4,730,342	1,471,553	2,220,657
28	North Dakota	63	53	6	1,058,649	570,140	34,372	28,217	364,321	95,352	....	12,835
29	South Dakota	38	43	3	32,697,991	5,154,263	113,109	94,028	3,224,675	1,054,532	55,139	421,048
30	Nebraska	18	20	....	222,428	260,049	12,900	3,745	169,937	35,474	....	22,019
31	Kansas	643	582	3,402	41,797,329	15,831,787	401,338	287,096	9,636,350	1,645,163	392,862	267,964
	SOUTH ATLANTIC:											
32	Delaware	9	9	....	959,078	508,937	61,900	8,115	217,727	152,054	....	26,378
33	Maryland	126	173	....	25,169,678	5,006,157	196,609	131,838	3,339,682	478,555	....	104,156
34	Virginia	150	244	....	55,992,693	8,863,954	357,255	255,366	6,229,787	1,173,866	....	484,527
35	West Virginia	798	718	15,146	219,466,909	71,347,631	2,197,617	1,631,267	35,980,736	11,647,711	893,664	1,212,825
36	North Carolina	118	130	....	5,985,112	1,416,075	81,646	41,398	862,762	152,714	....	103,319
37	South Carolina	29	32	....	1,209,390	1,034,823	56,065	27,175	626,429	124,618	....	117,899
38	Georgia	92	109	....	11,475,710	2,064,236	146,888	43,018	1,278,159	254,021	....	146,666
39	Florida	38	98	....	20,794,901	5,909,532	366,194	129,565	2,350,854	738,946	....	1,223,035
	EAST SOUTH CENTRAL:											
40	Kentucky	437	442	1,109	26,786,640	11,721,722	667,739	297,409	7,827,514	1,322,406	....	218,489
41	Tennessee	216	365	1	33,819,977	11,969,257	609,021	379,267	7,358,583	1,571,612	41,959	645,376
42	Alabama	177	302	....	85,081,804	22,442,278	941,207	737,146	14,257,709	2,492,214	128,178	1,048,824
	WEST SOUTH CENTRAL:											
43	Arkansas	96	146	62	7,200,417	4,309,211	162,502	75,965	3,026,140	368,207	....	138,987
44	Louisiana	33	2	246	13,207,232	6,841,555	148,388	178,645	872,627	859,458	7,200	726,971
45	Oklahoma	864	212	12,113	70,696,411	21,071,609	972,829	369,728	7,775,413	4,897,176	130,587	384,186
46	Texas	236	92	2,279	19,575,969	8,177,783	363,725	178,037	3,997,495	1,798,102	35,313	255,614
	MOUNTAIN:											
47	Montana	373	543	....	145,135,510	46,520,545	718,596	694,477	21,361,406	9,837,503	6,559,820	3,628,050
48	Idaho	174	370	....	48,892,888	7,198,763	269,251	88,627	4,045,547	1,847,458	....	356,199
49	Wyoming	66	95	21	9,505,365	9,053,467	255,635	191,772	6,266,787	1,385,594	....	376,187
50	Colorado	672	1,575	76	144,639,558	38,630,288	1,441,869	671,071	18,463,296	5,459,668	4,930,144	1,955,984
51	New Mexico	98	285	....	40,125,674	6,553,423	234,187	210,947	3,529,356	805,487	....	203,083
52	Arizona	135	251	....	119,772,781	28,808,216	677,885	440,295	13,502,760	5,559,367	1,370,391	5,603,989
53	Utah	188	235	....	81,000,043	16,606,028	755,233	442,294	8,988,851	3,920,414	106,910	1,074,119
54	Nevada	268	374	....	120,002,830	14,415,728	810,848	265,208	5,925,070	3,375,183	1,610,449	1,311,625
	PACIFIC:											
55	Washington	93	170	....	13,074,691	7,800,722	213,198	131,468	5,891,007	843,025	....	245,852
56	Oregon	116	161	....	9,186,834	1,223,468	91,387	33,446	705,192	186,796	....	98,592
57	California	1,329	1,279	4,318	253,577,552	52,565,278	2,177,287	791,492	19,049,442	18,789,652	2,762,660	2,775,643

---

[1] Exclusive of duplications, 307 operators having reported in two or more states. Such duplications have not been excluded in the totals for the several geographic divisions.

[2] Includes $59,468,780 which could not be distributed among the several states.

[3] In some cases the same operator conducted enterprises in two or more states, all such enterprises being managed through one central administrative office. In such cases it was impossible to assign the corporate officers and the central office force to any particular state; this was also the case in respect to contract work and taxes, which were reported in a lump sum for all properties. The total central office expenses were accordingly apportioned among the several states pro rata to the total expenses reported for each state and the estimated amounts of such administrative expenses were added to "Sundry expenses." In the totals for the United States, however, the number of officers and salaried employees, as well as their salaries, and the amount of contract work and taxes, appear under the proper heads. The amounts thus included in the item of "Sundry expenses" for individual states and distributed in the totals for the United States are as follows: Salaried officers of corporations, superintendents, and managers, $922,899; clerks and other subordinate salaried employees, $645,399; taxes, $142,240; and contract work, $61,801.

ENGAGED IN MINING INDUSTRIES, LAND CONTROLLED, AND POWER, FOR UNITED STATES, BY STATES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT—contd.				Value of products.	PERSONS ENGAGED IN MINING INDUSTRIES.						Land controlled (acres).	Primary horsepower.
	Miscellaneous.					Aggregate.	Proprietors and officials.			Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.		
	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and other sundry expenses.			Total.	Proprietors and firm members.	Salaried officers of corporations, superintendents, and managers.				
1	**$63,973,585**	**[5] $17,796,763**	**[5] $28,887,898**	**[5] $43,950,513**	**$1,238,410,322**	**[4] 1,139,332**	**49,374**	**29,922**	**[4] 19,452**	**[4] 24,675**	**1,065,283**	**24,215,611**	**4,608,253**
2	185,637	154,826	110,705	932,052	17,327,242	19,590	938	515	423	398	18,254	67,575	61,259
3	15,945,607	5,920,809	6,533,563	9,823,286	370,742,262	427,091	16,325	11,620	4,805	7,829	402,937	5,874,701	1,738,613
4	12,335,880	3,332,106	6,154,644	9,059,774	237,534,170	229,255	11,301	7,461	3,850	4,294	213,660	4,139,440	913,857
5	14,718,304	3,280,168	2,762,943	3,197,022	130,252,538	95,637	5,230	3,547	1,683	1,949	88,458	1,425,461	370,390
6	8,639,760	1,307,777	4,862,717	6,689,087	105,714,462	124,512	3,509	1,350	2,159	2,997	118,006	6,503,321	536,648
7	1,373,504	376,047	1,006,660	2,832,395	49,143,289	75,004	2,184	501	1,683	1,964	70,856	2,368,739	179,650
8	4,391,962	456,134	2,469,045	5,159,726	47,530,937	31,387	2,156	1,056	1,100	979	28,252	1,844,933	149,602
9	3,410,506	2,143,200	4,308,511	5,497,371	205,053,900	99,711	4,158	2,023	2,135	2,481	93,072	1,022,459	467,184
10	2,972,425	683,456	617,309	2,532,139	75,111,522	36,171	3,263	1,959	1,304	1,120	31,788	968,982	191,050
11	16,302	16,241	6,728	80,940	2,056,063	2,686	168	98	70	47	2,471	11,655	8,141
12	4,271	5,251	9,246	51,000	1,308,597	1,610	75	42	33	15	1,520	7,979	3,771
13	84,332	72,147	64,698	486,944	8,221,323	8,901	311	160	151	202	8,388	35,327	25,668
14	55,409	40,187	16,272	177,996	3,467,888	3,805	222	121	101	75	3,508	8,077	15,031
15	8,552	3,343	....	36,272	897,606	737	37	18	19	23	677	659	2,350
16	16,771	17,657	13,761	98,900	1,375,765	1,851	125	76	49	36	1,690	3,878	6,298
17	465,454	173,989	513,042	872,069	13,334,975	14,230	2,641	2,294	347	286	11,303	495,579	101,759
18	101,026	47,354	44,489	256,533	8,347,501	7,176	227	96	131	148	6,801	26,809	18,048
19	15,379,127	5,699,466	5,976,032	8,694,684	349,059,786	405,685	13,457	9,130	4,327	7,395	384,833	5,352,313	1,618,806
20	3,667,382	856,766	2,970,544	3,184,599	63,767,112	62,874	4,333	3,064	1,269	1,356	57,185	2,135,777	294,763
21	595,274	176,369	295,982	962,798	21,934,201	31,292	3,259	2,628	631	474	27,559	522,176	95,039
22	3,579,472	287,460	2,376,956	3,082,154	76,658,974	86,389	2,643	1,425	1,218	1,310	82,436	990,389	225,330
23	4,048,606	1,948,756	470,205	1,524,079	67,714,479	42,133	680	118	562	1,056	40,397	452,602	273,861
24	445,146	62,755	40,957	306,144	7,459,404	6,567	386	216	170	98	6,083	38,496	24,864
25	10,731,959	2,824,161	2,157,108	623,751	58,664,852	19,596	547	169	378	935	18,114	337,792	151,834
26	349,440	43,574	40,836	319,784	13,877,781	19,904	668	423	245	226	19,010	81,458	23,453
27	1,954,092	158,086	162,084	1,149,797	31,667,525	32,462	2,450	1,783	667	336	29,676	339,677	109,672
28	10,647	4,300	1,325	18,771	564,812	960	79	51	28	21	860	34,695	2,025
29	4,776	102,063	50	84,843	6,432,417	3,987	75	31	44	46	3,866	31,933	15,648
30	1,551	414	5,593	8,416	322,517	527	28	16	12	8	491	1,038	815
31	1,665,839	147,570	395,947	991,660	18,722,634	18,201	1,383	1,074	309	377	16,441	598,868	66,943
32	4,392	1,624	5,800	30,947	516,213	671	30	9	21	13	628	642	1,480
33	133,786	88,559	8,303	524,669	5,782,045	8,201	279	101	178	177	7,745	109,419	18,118
34	418,353	150,074	119,028	675,698	8,795,646	17,596	329	86	243	374	16,893	294,416	34,630
35	7,796,172	965,443	4,465,926	4,556,270	76,287,889	82,808	2,236	909	1,327	2,168	78,404	5,569,353	416,282
36	20,212	7,565	37,386	109,075	1,358,617	3,094	231	165	66	38	2,825	75,296	6,062
37	10,336	10,783	6,680	55,838	1,252,792	2,079	45	13	32	20	2,014	47,899	7,012
38	58,717	13,236	1,903	121,628	2,874,595	4,267	186	58	128	67	4,014	136,129	10,698
39	197,792	70,493	217,691	614,962	8,846,665	5,796	173	9	164	140	5,483	270,167	42,366
40	422,579	96,122	184,903	684,561	12,100,075	23,393	870	338	532	490	22,033	710,636	53,203
41	617,097	94,575	54,372	597,395	12,692,547	18,968	482	87	395	458	18,028	807,131	34,523
42	333,828	185,350	767,385	1,550,439	24,350,667	32,643	832	76	756	1,016	30,795	850,972	91,924
43	193,990	18,084	117,195	208,141	4,603,845	6,739	215	75	140	102	6,422	110,526	14,080
44	496,198	67,501	62,440	3,222,131	6,547,050	1,163	131	72	59	79	953	102,251	8,445
45	2,783,975	308,216	2,137,314	1,312,185	25,637,892	15,842	1,349	648	701	573	13,920	1,211,893	95,074
46	917,799	62,333	152,096	417,269	10,742,150	7,643	461	261	200	225	6,957	420,263	32,003
47	1,822,875	453,386	394,499	1,049,933	64,991,961	21,791	769	504	265	519	20,503	119,642	174,389
48	27,632	158,145	23,036	382,868	8,649,342	3,940	284	169	115	64	3,592	48,920	26,278
49	107,834	61,409	61,542	346,707	10,572,188	8,983	306	202	104	178	8,499	85,550	30,338
50	1,017,447	542,972	2,996,083	1,151,756	45,680,135	26,783	1,411	647	764	603	24,769	213,875	98,777
51	78,995	40,410	132,535	318,423	5,587,744	6,112	210	86	124	220	5,682	397,174	16,042
52	8,256	431,829	238,982	874,462	34,217,651	14,104	301	100	201	352	13,451	44,217	47,272
53	71,911	211,920	265,066	771,310	22,083,282	11,735	390	102	288	341	11,004	74,650	47,226
54	275,556	243,129	196,768	601,912	23,271,597	6,263	487	213	274	204	5,572	38,431	26,862
55	141,231	93,593	14,462	226,886	10,537,556	7,653	162	48	114	148	7,343	107,989	20,742
56	16,935	12,917	7,717	72,486	1,191,512	1,299	174	112	62	38	1,087	33,708	8,070
57	2,814,259	576,946	595,130	2,232,767	63,382,454	27,219	2,927	1,799	1,128	934	23,358	827,285	162,238

---

[4] The following numbers of persons, which could not be distributed by states, are included under the proper headings in the United States totals: Aggregate, 974; salaried officers of corporations, superintendents, and managers, 310; and clerks and other subordinate salaried employees, 664.

TABLE 9.—NONPRODUCING MINES, QUARRIES, AND WELLS—PERSONS ENGAGED IN MINING INDUSTRIES, LAND CONTROLLED, POWER, CAPITAL, AND EXPENSES: 1909.

INDUSTRY.	Number of operators.	Number of mines, quarries, and wells.	PERSONS ENGAGED IN INDUSTRY.							Land controlled (acres).	Primary horsepower.	Capital.
			Aggregate.	Proprietors and officials.				Clerks and other salaried employees.	Wage earners, Dec. 15, or nearest representative day.			
				Total.	Proprietors and firm members.		Officials.					
					Total.	Performing manual labor.						
All industries (United States)	3,749	....	27,616	5,494	3,769	1,076	1,725	623	21,499	1,969,067	91,657	$282,001,223
FUELS:												
Coal, anthracite	6	6	327	6	....	....	6	....	321	513	1,945	22,728
Coal, bituminous	38	55	765	50	9	5	41	30	685	89,700	2,609	9,402,665
Petroleum and natural gas	260	[1] 128	1,917	396	207	19	189	70	1,451	1,115,101	8,577	14,166,314
METALS:												
Iron	20	21	804	23	5	2	18	28	753	30,420	3,471	4,850,839
Copper	13	13	799	39	....	....	39	54	706	15,579	4,248	11,073,777
Precious metals—												
Deep mines	3,078	8,352	20,453	4,426	3,135	881	1,291	399	15,628	598,832	59,224	233,123,939
Placer mines	132	192	772	199	152	103	47	5	568	54,154	5,001	3,364.271
Lead and zinc	63	71	494	150	123	28	27	8	336	4,737	3,486	1,094,711
Quicksilver	18	28	139	27	19	9	8	1	111	9,139	120	893,800
Manganese	5	9	42	9	6	....	3	....	33	4,016	248	105,650
Tungsten	12	84	109	14	7	....	7	1	94	3,470	127	459,602
STRUCTURAL MATERIALS:												
Limestone	9	9	159	19	17	....	2	4	136	3,024	879	273,121
Granite	3	3	18	6	5	....	1	....	12	76	....	13,990
Marble	11	20	81	19	13	....	6	1	61	4,136	206	486,352
Slate	9	10	94	16	12	5	4	....	78	395	390	166,081
MISCELLANEOUS:												
Asbestos	5	76	25	4	....	1	4	2	19	2,455	....	264,734
Clay	6	6	46	16	14	1	2	....	30	973	20	34,760
Fluorspar	3	3	14	4	3	....	1	....	10	147	10	116,500
Graphite	6	6	35	6	1	3	5	3	26	11,005	85	258,018
Gypsum	4	6	25	4	3	2	1	....	21	1,230	10	46,741
Mica	4	4	29	5	3	3	2	....	24	165	....	13,708
Oilstones, scythestones, and whetstones	4	4	13	6	6	1	....	....	7	240	50	2,600
Phosphate rock	5	33	137	8	2	4	6	2	127	3,765	455	132,000
Precious stones	7	11	27	11	11	2	....	....	16	261	....	22,125
ALL OTHER INDUSTRIES [2]	29	54	292	31	16	7	15	15	246	15,534	496	1,612,197

---

[1] Exclusive of wells not completed on Dec. 31, 1909.

[2] Includes enterprises as follows: Antimony, 1; asphaltum and bituminous rock, 2; bluestone, 1; borax, 1; chromite, 1; feldspar, 1; garnet, 1; grindstones, 1; infusorial earth, 1; lithographic stone, 2; lithium, 1; magnesite, 1; mineral pigments, 2; molybdenum, 4; monazite and zircon, 1; peat, 2; pyrite, 1; quartz, 1; tin, 1; titanium, 1; uranium, 1; and vanadium, 1.

TABLE 9.—NONPRODUCING MINES, QUARRIES, AND WELLS—PERSONS ENGAGED IN MINING INDUSTRIES, LAND CONTROLLED, POWER, CAPITAL, AND EXPENSES: 1909—Continued.

INDUSTRY.	EXPENSES OF OPERATION AND DEVELOPMENT.							
	Total.	Services.			Supplies, materials, and fuel.		Miscellaneous.	
		Salaried officers of corporations, superintendents, and managers.	Clerks and other salaried employees.	Wage earners.	Supplies and materials.	Fuel and rent of power.	Contract work.	All other miscellaneous expenses.
All industries (United States)	$31,548,738	$2,092,650	$392,277	$12,931,810	$10,877,732	$1,386,862	$1,802,660	$2,084,745
FUELS:								
Coal, anthracite	263,501	7,151	3,009	173,438	58,956	2,563	1,351	17,033
Coal, bituminous	748,867	37,795	14,878	229,028	184,877	2,137	214,310	86,042
Petroleum and natural gas	7,044,383	191,155	25,543	1,002,383	4,937,764	198,552	303,162	385,824
METALS:								
Iron	862,301	18,068	15,962	316,530	237,882	83,674	63,775	128,410
Copper	900,252	57,882	34,556	475,123	167,906	75,113	12,698	76,974
Precious metals—								
Deep mines	20,321,074	1,630,738	276,360	10,086,470	5,017,908	951,148	1,089,536	1,268,914
Placer mines	506,426	49,685	1,375	243,336	145,138	6,219	27,487	33,186
Lead and zinc	241,450	16,501	2,712	86,442	39,205	24,161	63,336	9,093
Quicksilver	96,904	7,050	900	69,354	10,367	1,970	...	7,263
Manganese	19,167	2,203	...	12,324	2,168	1,262	...	1,210
Tungsten	83,877	15,412	816	42,204	14,960	565	...	9,920
STRUCTURAL MATERIALS:								
Limestone	77,112	874	2,592	22,612	42,424	679	4,420	3,511
Granite	4,574	600	...	2,395	1,510	...	...	69
Marble	43,531	7,380	600	19,054	8,379	2,206	1,800	4,112
Slate	29,175	3,890	...	19,532	2,625	2,427	...	701
MISCELLANEOUS:								
Asbestos	36,893	8,177	1,420	14,311	1,422	...	...	11,563
Clay	6,996	900	...	3,773	1,000	...	40	1,283
Fluorspar	4,218	1,320	...	2,010	449	245	...	194
Graphite	62,801	11,100	1,508	14,577	2,225	108	11,028	22,255
Gypsum	6,290	120	...	4,130	1,635	5	...	400
Mica	5,343	600	2,378	708	1,102	...	500	55
Oilstones, scythestones, and whetstones	1,805	...	...	937	165	70	...	633
Phosphate rock	37,567	4,825	350	24,673	1,421	3,828	...	2,470
Precious stones	2,227	...	...	1,811	301	...	...	115
ALL OTHER INDUSTRIES[1]	142,002	19,224	7,318	64,765	16,143	9,930	9,117	15,515

---

[1] Includes enterprises as follows: Antimony, 1; asphaltum and bituminous rock, 2; bluestone, 1; borax, 1; chromite, 1; feldspar, 1; garnet, 1; grindstones, 1; infusorial earth, 1; lithographic stone, 2; lithium, 1; magnesite, 1; mineral pigments, 2; molybdenum, 4; monazite and zircon, 1; peat, 2; pyrite, 1; quartz, 1; tin, 1; titanium, 1; uranium, 1; and vanadium, 1.

TABLE 10.—NONPRODUCING MINES, QUARRIES, AND WELLS—CAPITAL, EXPENSES, PERSONS

	STATE.	Number of operators.	Number of mines and quarries.	Number of wells.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.					
						Total.	Services.			Supplies.	
							Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Supplies and materials.	Fuel and rent of power.
1	**United States**	**3,749**	**9,076**	**128**	**$282,001,223**	**$31,548,736**	**$2,092,650**	**$392,277**	**$12,931,910**	**$10,877,732**	**$1,368,862**
	NEW ENGLAND:										
2	Maine	3	3	....	52,600	13,474	1,000	....	8,941	1,873	1,470
3	Vermont	4	6	....	1,002,600	82,213	....	....	25,894	50,281	5,030
	MIDDLE ATLANTIC:										
4	New York	5	3	....	161,820	16,764	1,800	....	5,720	2,810	....
5	Pennsylvania	31	21	17	1,942,304	419,320	17,726	4,517	207,504	93,571	3,677
	EAST NORTH CENTRAL:										
6	Ohio	9	2	15	123,150	69,324	240	....	2,213	20,014	43
7	Indiana	4	1	4	89,849	41,074	....	....	10,198	21,802	742
8	Illinois	9	5	7	510,246	143,864	1,790	....	31,296	22,525	2,024
9	Michigan	14	14	....	11,462,634	955,654	58,862	35,636	486,418	171,816	77,761
10	Wisconsin	22	22	....	1,382,017	105,921	10,119	2,712	46,669	14,799	22,054
	WEST NORTH CENTRAL:										
11	Minnesota	10	10	....	2,302,582	635,593	11,238	12,722	253,514	156,694	67,100
12	Iowa	15	15	....	279,308	55,983	2,892	2,100	27,740	5,927	4,172
13	Missouri	29	31	....	1,294,398	229,898	6,360	300	42,467	25,420	9,760
14	South Dakota	16	19	....	1,690,587	147,902	15,480	2,610	84,328	18,880	4,894
15	Kansas	3	3	....	24,200	36,432	....	550	14,065	14,315	379
	SOUTH ATLANTIC:										
16	Virginia	13	18	....	764,448	103,942	15,849	1,074	35,974	29,597	3,629
17	West Virginia	17	10	10	2,193,036	311,279	5,234	8,038	45,856	110,847	204
18	North Carolina	9	15	....	103,322	20,754	1,382	2,378	6,185	4,622	3,829
	EAST SOUTH CENTRAL:										
19	Kentucky	4	2	....	757,879	23,866	6,120	3,750	7,337	2,880	650
20	Tennessee	5	10	....	127,400	97,391	3,218	300	19,439	65,361	95
21	Alabama	7	10	6	2,186,627	64,112	7,490	2,840	18,998	24,576	494
	WEST SOUTH CENTRAL:										
22	Arkansas	9	10	....	130,600	15,474	720	....	5,193	2,315	425
23	Oklahoma	16	5	22	216,053	84,421	1,435	100	14,598	33,232	1,459
24	Texas	22	3	2	526,200	155,595	7,795	750	56,263	53,672	21,330
	MOUNTAIN:										
25	Montana	265	756	....	20,641,409	1,505,804	102,773	7,369	805,329	358,272	46,035
26	Idaho	716	2,061	....	32,105,866	2,453,525	163,093	19,619	1,302,542	535,915	56,614
27	Wyoming	60	272	17	3,158,503	394,558	73,505	6,151	160,479	79,737	20,257
28	Colorado	338	1,414	....	25,799,608	2,429,972	271,553	34,227	1,200,149	499,073	110,959
29	New Mexico	61	73	....	7,450,022	648,819	51,742	20,278	289,451	133,143	80,401
30	Arizona	304	896	....	57,045,045	5,111,100	349,058	104,735	2,466,946	1,401,828	341,937
31	Utah	311	436	4	16,983,757	1,714,529	96,177	17,228	861,810	456,164	77,581
32	Nevada	282	647	....	36,604,278	3,121,477	274,250	50,080	1,410,083	799,452	129,416
	PACIFIC:										
33	Washington	323	1,080	....	8,231,150	873,842	96,038	5,225	487,916	179,566	9,213
34	Oregon	119	296	....	11,359,759	552,738	52,749	8,610	289,404	138,339	18,744
35	California	692	891	24	31,260,935	8,685,907	374,582	35,444	2,103,394	5,263,817	238,328
36	ALL OTHER STATES[1]	12	16	....	2,037,031	226,215	10,380	2,934	97,597	84,597	6,156

[1] Includes operators as follows: Florida 2, Georgia 1, Louisiana 2, Maryland 2, Massachusetts 1, Nebraska 1, New Hampshire 1, New Jersey 1, South Carolina 1.

ENGAGED IN MINING INDUSTRIES, LAND CONTROLLED, AND POWER, BY STATES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.		PERSONS ENGAGED IN MINING INDUSTRIES.							Land controlled (acres).	Primary horsepower.
	Miscellaneous.		Aggregate.	Proprietors and officials.				Clerks and other subordinate salaried employees.	Wage earners, Dec. 15 or nearest representative day.		
				Total.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.				
	Contract work.	All other miscellaneous expenses.			Total.	Performing manual labor.					
1	$1,802,560	$2,084,745	27,616	5,494	3,789	1,076	1,725	623	21,499	1,989,067	91,657
2	...	190	32	3	1	1	2	...	29	181	55
3	...	1,008	39	9	9	1	...	...	30	1,336	908
4	3,500	2,934	23	10	9	2	1	...	13	12,807	...
5	34,571	57,754	589	117	104	6	13	3	469	9,996	2,366
6	35,373	11,441	28	8	5	...	3	...	20	0,953	50
7	6 410	1,922	33	1	1	...	...	...	32	2,326	265
8	66,422	19,807	106	14	11	...	3	...	92	11,497	1,014
9	41,468	83,693	837	39	...	...	39	57	741	17,305	4,823
10	4,404	5,164	219	30	16	3	14	7	182	2,161	2,021
11	34,900	99,425	566	15	2	...	13	20	531	1,749	1,759
12	1,634	11,518	117	32	28	13	4	3	82	3,237	775
13	135,296	10,295	264	81	71	15	10	2	181	30,746	1,335
14	12,000	9,710	182	19	8	5	11	5	158	10,991	760
15	1,856	5,267	58	1	1	1	...	1	56	381	225
16	585	17,234	181	15	2	...	13	4	162	12,644	1,182
17	110,617	30,483	254	21	9	...	12	12	221	30,441	1,127
18	200	2,158	81	16	11	3	5	...	65	2,284	306
19	1,577	1,552	62	9	4	...	5	6	47	1,167	40
20	6,100	2,878	124	8	2	...	6	1	115	2,503	185
21	6,400	3,314	90	12	2	1	10	11	67	29,784	330
22	4,280	2,541	35	11	11	3	...	...	24	1,326	180
23	28,403	5,194	82	29	24	4	5	2	51	20,427	365
24	4,400	11,385	176	35	23	3	12	3	138	48,522	665
25	109,232	76,794	1,480	357	272	177	85	12	1,111	38,298	5,063
26	297,161	78,581	3,019	862	702	182	160	35	2,122	94,546	5,052
27	19,425	35,004	374	68	27	13	41	11	295	175,294	1,138
28	149,251	164,760	2,672	757	557	86	200	48	1,867	86,153	11,403
29	30,148	43,656	491	82	44	10	38	22	387	70,452	1,389
30	170,714	275,882	3,990	405	209	67	196	119	3,466	94,746	8,501
31	115,225	90,344	1,625	196	104	18	92	37	1,392	77,700	3,945
32	120,679	337,517	2,522	616	392	78	224	82	1,824	55,366	5,337
33	48,279	47,605	1,604	445	350	51	95	10	1,149	48,131	3,698
34	13,207	31,685	691	152	103	44	49	11	528	27,350	4,544
35	188,843	481,499	4,719	1,007	652	289	355	92	3,620	235,311	18,826
36	...	24,551	251	12	3	...	9	7	232	704,956	2,025

Table 11.—NUMBER OF ENTERPRISES

	INDUSTRY.	Total.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
1	**All industries**	**25,017**	**225**	**445**	**121**	**2,025**	**1,060**	**71**	**9**	**38**	**95**	**890**	**995**	**1,035**	**402**	**692**	**464**	**35**	**100**	**131**	**140**
2	Antimony	2										1									
3	Asbestos	10		1		1					1	1									
4	Asphaltum and bituminous rock	14				2	1										2				
5	Barytes	23									1						2				
6	Bauxite	10	1		2						6										
7	Bismuth	1																			
8	Bluestone	564						1											2		1
9	Borax	3				3															
10	Buhrstones and millstones	14	1																		
11	Chromite	3																			
12	Clay	267	5	1		9	9		3	4	10		14	6	4		10			11	3
13	Coal, anthracite	368					2														
14	Coal, bituminous	4,392	139		60	3	128				2	3	543	245	275	166	264			44	
15	Copper	201		49		10	9					4								1	
16	Corundum and emery	4																			1
17	Feldspar	23				2		4											3	3	1
18	Fluorspar	16		1			3						5				5				
19	Fuller's earth	16	1		4	1	1			3	2										1
20	Garnet	4																			
21	Gold and silver, deep mines	4,694	2	371	2	792	770				2	757								1	
22	Gold and silver, placer mines	810		2		477	11				8	113									
23	Granite	710		1	1	62	15	38	6		32	2							85	16	82
24	Graphite	24	2			1	1				2										
25	Grindstones	14					1														
26	Gypsum	82		1		8	4								5	6					
27	Infusorial earth	15				3		1					10								
28	Iron	320	41				1	1			13				1		2			12	1
29	Lead and zinc	1,040			7		5						6		15	190	1				
30	Limestone	1,674	21	2	6	12	9			3	3	2	81	126	90	102	83	1		10	
31	Lithium	1				1															
32	Lithographic stone	2															1				
33	Magnesite	7				7															
34	Manganese	8				1															
35	Manganiferous iron	2			1		1														
36	Marble	88	1	1		9	3				5						1			2	8
37	Marl	3																			
38	Mica	77					1												1		
39	Mineral pigments	25	1			3					4									1	
40	Molybdenum	4				2	1														
41	Monazite and zircon	5																			
42	Nickel and cobalt	1																			
43	Oilstones, scythestones, and whetstones.	25			16									6							
44	Peat	12											1	3	1				2		1
45	Petroleum and natural gas	8,202	3	1	4	510	25						327	647		217	87	33			
46	Phosphate rock	76			1					28		1									
47	Precious stones	30		6	2	11													1		
48	Pumice	3										1									
49	Pyrite	12	1			1					2										1
50	Quartz	15		2				3												5	1
51	Quicksilver	30				25															
52	Sandstone	595	6	5	12	19	35	7				4	8	2	11	11	6			4	13
53	Slate	194				1	1				1								6	6	
54	Sulphur	4																1			
65	Talc and soapstone	39				1					1									1	3
56	Tin	2																			
57	Titanium	1																			
58	Traprock	196			3	43		16				1								14	23
69	Tripoli	4																			
60	Tungsten	34		1		5	21														
61	Uranium	1					1														
62	Vanadium	1					1														

IN EACH STATE, BY INDUSTRIES: 1909.

	Michigan.	Minnesota.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
1	133	189	1,066	647	19	548	46	133	164	1,366	127	53	1,952	888	236	5,287	21	32	55	246	260	504	141	195	425	808	261	130
2																									1			
3																							1					6
4														4								4				1		
5			16								1									1				2				
6																				1								
7									1																			
8								2		351						205										2		
9																												
10										9	1					1								2				
11											1			1														1
12	1		18	1			1	31	1	2	2		36			45		6		14	3	4	4	1	4	3	1	1
13									1							365												
14	17		191	52	1				22			52	503	64	9	927				95	32	19		48	43	406		39
15	33	1		41		7	1		12		1									2		22			6			2
16										3																		
17										3						6								1				
18							1		1																			
19																		1			2							
20										3	1																	
21				442		490		1	96		4			1	142			4	29		3	403	1	6	327			49
22				84		22			3		6				68				3	1		7			5			1
23		35	7	2		1	40	6	1	29	32			6	8	43	20	11	4		11	3	51	23	15		22	
24				1		1				5						8						1					2	
25	2												8													3		
26	8			1		5			5	13			2	10	1				2		3	3		2				3
27										1																		
28	46	55	20			1		9	1	14	1		4			17				20	1	4		45		1	8	1
29			641	1		7		1	2					51						4		2					107	
30	20	90	144	9	16	1		6	2	127	2		144	17		311			2	49	16	10	3	26	2	13	110	3
31																												
32																						1						
33																												
34																				1		1		5				
35																												
36										10	1				1	5				18	1	2	13		4	2		1
37								1										1						1				
38							2			1	66								1					4				1
39								1								10							3	1	1			
40																									1			
41											3							2										
42			1																									
43							1						1										1					
44	1							2								1												
45	1		12	1						710		1	1,202	722	1	3,044			3	1	182	4				450		14
46																		7		36		2						1
47				1		4			2													2						1
48					2																							
49										1														5			1	
50										1										2							1	
51						4															1.							
52	2	7	14	11				15	3	50			52	12	2	172			10	1	5	9		4	11	27	39	6
53								2		10						102							56	9				
54						1																1						1
55								1		5	6					3	1						8	10				
56											1								1									
57																								1				
58	2	1						55	1	8					4	22		1							2			
59			4																									
60						4																			3			
61																												
62																												

TABLE 11.—NUMBER OF ENTERPRISES IN

	INDUSTRY.	Total.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
1	**Producing induitries**	**21,268**	**218**	**141**	**112**	**1,333**	**722**	**71**	**9**	**36**	**94**	**174**	**986**	**1,031**	**387**	**689**	**460**	**33**	**97**	**129**	**139**
2	Antimony	1										1									
3	Asbestos	5									1	1									
4	Asphaltum and bituminous rock	12				2											2				
5	Barytes	23									1						2				
6	Bauxite	10	1		2						6										
7	Bismuth	1																			
8	Bluestone	563						1											2		1
9	Borax	2				2															
10	Buhrstones and millstones	14	1																		
11	Chromite	2																			
12	Clay	261	5	1		7	9		3	4	10		14	6	4		10			11	3
13	Coal, anthracite	362					2														
14	Coal, bituminous	4,354	137		60	2	126				2	2	541	244	272	164	263			43	
15	Copper	188		49		10	9					4								1	
16	Corundum and emery	4																			1
17	Feldspar	22				1		4											3	3	1
18	Fluorspar	13		1			2						4				5				
19	Fuller's earth	16	1		4	1	1			3	2										1
20	Garnet	3																			
21	Gold and silver, deep mines	1,616	1	70		395	449				1	60									
22	Gold and silver, placer mines	678		1		392	9				8	96									
23	Granite	707		1	1	62	15	38	6		32	2							85	16	82
24	Graphite	19	2				1				2										
25	Grindstones	13					1														
26	Gypsum	78		1		5	4								5	6					
27	Infusorial earth	14				2		1					10								
28	Iron	300	41				1	1			13						2			12	1
29	Lead and zinc	977			5		5						4		5	189	1				
30	Limestone	1,665	21	2	6	11	9			3	3	1	81	126	89	102	83	1		10	
31	Magnesite	6				6															
32	Manganese	3																			
33	Manganiferous iron	2			1		1														
34	Marble	77	1	1		6	2				5						1			2	8
35	Marl	3																			
36	Mica	73					1												1		
37	Mineral pigments	23				2					4									1	
38	Monazite and zircon	4																			
39	Nickel and cobalt	1																			
40	Oilstones, scythestones, and whetstones.	21			12									6							
41	Peat	10											1	3	1				1		
42	Petroleum and natural gas	7,942			3	342	23						323	644		217	85	31			
43	Phosphate rock	71			1					26		1									
44	Precious stones	23		6	2	7															
45	Pumice	3										1									
46	Pyrite	11	1			1					2										1
47	Quartz	14		2				3												5	1
48	Quicksilver	12				10															
49	Sandstone	595	6	5	12	19	35	7				4	8	2	11	11	6			4	13
50	Slate	185				1					1								5	6	
51	Sulphur	4																1			
52	Talc and soapstone	39				1					1									1	3
53	Tin	1																			
54	Traprock	196			3	43		16				1								14	23
55	Tripoli	4																			
56	Tungsten	22		1		3	17														

EACH STATE, BY INDUSTRIES: 1909—Continued.

	Michigan.	Minnesota.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
1	119	179	1,039	382	18	266	45	132	103	1,351	118	53	1,943	872	117	5,256	21	31	39	241	238	193	137	182	102	891	289	70
2																												
3																							1					2
4														4								3				1		
5			16								1									1				2				
6																				1								
7									1																			
8								2		350						205										2		
9																												
10										9	1					1								2				
11														1														1
12	1		17	1			1	31	1	2	2		36			45		5		14	3	4	4	1	1	3	1	1
13									1							359												
14	17		190	51					21			52	501	64	9	923				95	31	18		47	40	400		39
15	21			41		7	1		12		1									2		22			6			2
16										3																		
17										3						6								1				
18									1																			
19																		1			2							
20										3																		
21				192		218			47		2				32			4	13		2	109		1	19			1
22				73		21			2		4				60				3	1		3			5			
23		35	7	2		1	40	6	1	28	32			6	8	43	20	11	4		11	3	51	23	14		21	
24						1				4						7						1					1	
25	2												8													2		
26	8			1		4			5	13			2	10	1				2		3	3		2				3
27										1																		
28	44	46	17			1		9	1	14	1		4			16				19	1	3		44		1	7	1
29			617	1		7		1	2					47						3		2					88	
30	20	90	144	8	16			6	2	127	2		144	17		311			2	49	16	9	3	26		12	110	3
31																												
32																				1				2				
33																												
34										10	1				1	4				18		1	12		2	1		1
35								1										1						1				
36							2			1	63								1					3				1
37								1								10							3	1	1			
38											3							1										
39			1																									
40							1						1										1					
41	1							2								1												
42	1		12							708		1	1,195	711		3,030			3	1	163					442		7
43																		7		34		1						1
44				1		4			2													1						
45					2																							
46										1														4			1	
47										1										1							1	
48						1															1							
49	2	7	14	11				15	3	50			52	12	2	172			10	1	5	9		4	11	27	39	6
50								2		10						98							54	8				
51						1																1						1
52								1		5	5					3	1						8	10				
53																			1									
54	2	1						55	1	8					4	22		1							2			
55			4																									
56																									1			

TABLE 11.—NUMBER OF ENTERPRISES IN

	INDUSTRY.	Total.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
1	**Nonproducing industries**	**3,749**	**7**	**304**	**9**	**692**	**338**			**2**	**1**	**716**	9	**4**	**15**	**3**	**4**	**2**	**3**	**2**	**1**
2	Antimony	1																			
3	Asbestos	5		1		1															
4	Asphaltum and bituminous rock	2					1														
5	Bluestone	1																			
6	Borax	1				1															
7	Chromite	1																			
8	Clay	6				2															
9	Coal, anthracite	6																			
10	Coal, bituminous	38	2			1	2					1	2	1	3	2	1			1	
11	Copper	13																			
12	Feldspar	1				1															
13	Fluorspar	3					1						1								
14	Garnet	1																			
15	Gold and silver, deep mines	3,078	1	301	2	397	321				1	697								1	
16	Gold and silver, placer mines	132		1		85	2					17									
17	Granite	3																			
18	Graphite	5				1															
19	Grindstones	1																			
20	Gypsum	4				3															
21	Infusorial earth	1				1															
22	Iron	20													1						
23	Lead and zinc	63			2								2		10	1					
24	Limestone	9				1						1			1						
25	Lithium	1				1															
26	Lithographic stone	2															1				
27	Magnesite	1				1															
28	Manganese	5				1															
29	Marble	11				3	1														
30	Mica	4																			
31	Mineral pigments	2	1			1															
32	Molybdenum	4				2	1														
33	Monazite and zircon	1																			
34	Oilstones	4			4																
35	Peat	2																	1		1
36	Petroleum and natural gas	260	3	1	1	168	2						4	3			2	2			
37	Phosphate rock	5								2											
38	Precious stones	7				4													1		
39	Pyrite	1																			
40	Quartz	1																			
41	Quicksilver	18				15															
42	Slate	9					1												1		
43	Tin	1																			
44	Titanium	1																			
45	Tungsten	12				2	4														
46	Uranium	1					1														
47	Vanadium	1					1														

EACH STATE, BY INDUSTRIES: 1909—Continued.

	Michigan.	Minnesota.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
1	14	10	29	285	1	282	1	1	51	5	9	.....	9	18	119	31	.....	1	16	5	22	311	4	13	323	17	22	60
2																									1			
3																												3
4																						1						
5										1																		
6																												
7											1																	
8			1																						3			
9																6												
10			1	1	1				1				2			4					1	1		1	3	6		
11	12	1																										
12																												
13							1																					
14											1																	
15				250		272		1	49		2			1	110				16		1	294	1	4	308			48
16				11		1			1		1				8							4						1
17										1															1		1	
18				1						1						1											1	
19																										1		
20						1																						
21																												
22	2	9	3													1				1		1		1			1	
23			24											4						1							19	
24				1		1																1			2	1		
25																												
26																						1						
27																												
28																						1		3				
29																1					1	1	1		2	1		
30											3													1				
31																												
32																									1			
33																		1										
34																												
35																												
36				1						2			7	11	1	14					19	4				8		7
37																				2		1						
38																						1						1
39																								1				
40																				1								
41						3																						
42																4							2	1				
43											1																	
44																								1				
45						4																			2			
46																												
47																												

APPENDICES

APPENDIX A.—SCHEDULES

APPENDIX B.—INSTRUCTIONS TO SPECIAL AGENTS

APPENDIX C.—GENERAL INSTRUCTIONS FOR EDITING AND REVISING THE SCHEDULES FOR MINES, QUARRIES, AND WELLS

APPENDIX A.—SCHEDULES.

The information contained in the statistics for mines, quarries, and petroleum and natural gas wells for 1909 was collected by means of a general schedule and certain supplementary schedules. The same general schedule was used for all mines and quarries and in slightly modified form for petroleum and natural gas wells.

In addition to the general schedule there was a special "Administrative and general office" schedule. This schedule was used in all cases where a number of mines, quarries, or wells were managed from a central office and on it were reported the capital, persons employed, expenses, etc., which could not be distributed among the different plants.

Supplemental schedules were used for particular industries and were designed to develop statistics peculiar to the different industries to which they relate, such as the quantities and values of products, and in some cases data with regard to the mechanical equipment of the plant. These special schedules are very numerous and for lack of space can not be reproduced in full. The supplemental schedule used for iron mines is given, however, for the purpose of illustrating the general character of these supplemental schedules. There is also here reproduced the general schedule used in reporting mines and quarries and the administrative and general office schedule.

Following is a list of the products for which separate supplemental schedules were used, the character of the schedule being in each case similar to that for iron mines, but the contents varying to suit the conditions peculiar to each industry.

Asphaltum and bituminous rock.
Bluestone.
Buhrstones and millstones.
Clay.
Coal, anthracite.
Coal, bituminous.
Copper.
Granite.
Gypsum.
Iron.
Lead and zinc.
Limestone.
Manganese.
Manganiferous iron.
Marble.
Mica.
Petroleum and natural gas.
Phosphate rock.
Precious metals, deep mines.
Precious metals, placer mines.
Pyrite.
Quicksilver.
Sandstone.
Slate.
Talc and soapstone.
Traprock.

For the other industries, noted below, a separate supplemental schedule was not provided, all being reported either on a schedule prepared for "Rare Metals" or on a common supplemental schedule designated "Miscellaneous mining industries."

Antimony.
Asbestos.
Barytes.
Bauxite.
Bismuth.
Borax.
Chromite.
Corundum and emery.
Feldspar.
Fluorspar.
Fuller's earth.
Garnet.
Graphite.
Grindstones.
Infusorial earth.
Lithium.
Lithographic stone.
Magnesite.
Marl.
Mineral pigments.
Molybdenum.
Monazite and zircon.
Nickel and cobalt.
Oilstones, scythestones, and whetstones.
Peat.
Precious stones.
Pumice.
Quartz.
Sulphur.
Tin.
Titanium.
Tripoli.
Tungsten.
Uranium.
Vanadium.

DEPARTMENT OF COMMERCE AND LABOR, BUREAU OF THE CENSUS.

8-1577 [LLI-266]

CENSUS OF MINES AND QUARRIES, 1909.

GENERAL SCHEDULE.

1. *Description of mine or quarry:* If the information given on this schedule embraces more than one mine or quarry, give the name and location of each on supplemental schedule.

Name of mine or quarry..............................

Name of operator..............................

If operator is not owner of the mine or quarry, give name and address of owner

....

Number of mines or quarries covered by this report..............................

Location of mine or quarry: State.................... County................

City or town........... Post office...........

Post-office address of general office..............................

Period covered by this report: From.........., 19......, to..........., 19...

Character of organization..............................

The answer should relate to the last day of the period covered by the report and should be one of the following: *Individual, general partnership, limited partnership, incorporated company, cooperative association,* or *other.*

1. *Description of mine or quarry*—Continued.

Number of proprietors and partnership members, if a nonincorporated organization.......................... Men..............

Give number of members on last day of period covered by this report. If partnership, give both active and silent partners. If cooperative society, give number of members of society. Women...........

Number of proprietors, if any, regularly performing manual labor in or about mine or quarry..............................

Number of stockholders, if an incorporated organization..............................

Give number of stockholders on the last day of the period covered by this report.

WASHINGTON, D. C., *January 3, 1910.*

The Census of Mines and Quarries is taken in conformity with the requirements of the act of Congress approved July 2, 1909. Reports are required on this schedule for all mines and quarries that were in operation for development or productive purposes during any portion of the year ending December 31, 1909, but the statistics may pertain to the business year which most nearly conforms to the calendar year. The law makes it obligatory upon the owner or operator of any mine or quarry to furnish Census data.

To avoid duplicate inquiries, the Geological Survey, which collects annual statistics of production, and the Bureau of the Census are cooperating. In addition to the report on this blank, a report must be made on the special supplemental schedule.

All answers will be held absolutely confidential. No publication will be made in the Census reports disclosing the name or operations of individual establishments in any particular, and the information will be used only for the statistical purposes for which it is supplied. The act of Congress provides that the Bureau of the Census shall not permit any other than the sworn employees of the Bureau to examine the individual reports. It also provides that any employee who shall, without the authority of the Director of the Census, publish or communicate any information coming into his possession, shall be guilty of a misdemeanor, and upon conviction be fined not to exceed $1,000, or be imprisoned not to exceed two years, or both, in the discretion of the Court.

Amounts and values are to be obtained from book accounts, if such accounts are available. Each question should be answered. If any question is found not applicable and no amounts are reported, write the word "None." Do not duplicate any item of expense.

E. Dana Durand,
Director of the Census.

2. *Time in operation and hours worked:*

Number of days in operation during the year..............................

Give the number of days the mine or quarry, or any part of the mine or quarry, was in operation during the year. Days when shut down for repairs, or for other causes, and there was neither *development work* nor *production*, should *not* be included. Do not include Sundays and holidays unless plant was in actual operation.

Number of hours normally worked by wage earners: (*a*) Per shift.........
(*b*) Per week...........

Give the prevailing practice followed during the year, without attempting to indicate variations from this practice. All that it is desired to know is the practice generally prevailing in respect to the hours of labor of employees.

3. *Capital invested and area of mineral and other lands:*

Amount of capital, both owned and borrowed, invested by operator.........

$.....................

The answer should show the total amount of capital, owned and borrowed, invested by the operator in the enterprise on the last day of the business year reported, as shown by his books. Do *not* include securities and loans representing investments in other enterprises.

Mineral and other lands: Number of acres owned or leased by operator.
Include only lands actually pertaining to the mining property covered by this report; not undeveloped lands elsewhere owned by the same operator.

	Owned by operator.	Held under lease by operator.	Sublet to others.
Mineral or coal land (acres)............			
Timber land not included above (acres).			
Other land (acres)...................			
Total (acres).................			

4. *Salaried employees: Number, December 15, 1909, as per pay roll.* If data are not obtainable for that day or month, give the data for nearest representative or normal day, and state day and month here.......................

	Men.	*Women.*
Salaried officers of corporations......................		
Superintendents and managers.......................		
Clerks, stenographers, and other salaried employees..		
Total.....................................		

5. *Wage earners, including employees paid by ton, car, yard, or other unit: Number, December 15, 1909, as per pay roll.* If data are not obtainable for that day or month, give data for same day as for Inquiry 4. Answers should include all persons working in connection with mine or quarry, whether employed directly by owner or working for lessee, contractor, or other. Include overseers and foremen receiving wages and performing work similar to men over whom they have charge; those whose duties are wholly supervisory should be reported under second item of Inquiry 4.

	Above ground.	Below ground.
Employed directly by operator:		
Engineers, firemen, machinists, carpenters, and other mechanics..............		
Miners, quarrymen, and stonecutters..............		
Miners' helpers (16 years or over)..............		
All other employees (16 years or over)..............		
Boys under 16 years..............		
Total employed directly by operator..............		
Employed otherwise, as by contractor, etc..............		
Total employed directly and otherwise..............		

Number of women, if any, employed in or about the mine or quarry, and included above.....................

6. *Wage earners, including employees paid by ton, car, yard, or other unit: Number, as per pay rolls or time records on 15th day of each month of the period covered by this report.* If data are not obtainable for that day, give data for nearest representative day.

EMPLOYED DIRECTLY BY OPERATOR.						EMPLOYED OTHERWISE, AS BY CONTRACTOR, ETC.					
Month.	Number.	Month.	Number.	Month.	Number.	Month.	Number.	Month.	Number.	Month.	Number.
Jan...........		May..........		Sept..........		Jan...........		May..........		Sept..........	
Feb...........		June..........		Oct..........		Feb...........		June..........		Oct..........	
Mar...........		July..........		Nov..........		Mar...........		July..........		Nov..........	
Apr...........		Aug..........		Dec..........		Apr...........		Aug..........		Dec..........	

7. *Salary and wage payments: Total amounts paid in salaries and wages during the year covered by this report.* Wages should be net wages, after deducting charges for supplies furnished by the company to miners or quarrymen and stonecutters, such as explosives, lamp oil, blacksmithing, etc., as well as charges for power, hoisting, superintendence, etc. Do not include amount paid for contract work if not done by the regular employees, as the amount paid for such work should be reported under Inquiry 9. See note to Inquiry 5 as to overseers and foremen.

Salaried officers of corporations.................................... $........

Superintendents and managers.................................... $........

Clerks, stenographers, and other salaried employees................ $........

Wage earners, paid by unit of time, ton, car, foot, or yard........ $........
Include payments to contract miners compensated by these units.

7. *Salary and wage payments*—Continued.

Miners and others compensated by share of product............... $........
This should include total amount paid to block lessees, leasers, tributers, and all others performing work for share of product, after royalties charged have been deducted.

Total.. $........

Amount charged to miners, quarrymen, and stonecutters for explosives, lamp oil, and blacksmithing charges, etc., as well as charges for power, hoisting, superintendence, etc., deducted from gross wages in computing net wages above.................. $........

Rate of royalty received by operator if any work done is compensated for by share of product.................................... ....

8. *Materials, supplies, and fuel: Total cost of all used during the year covered by this report.* This inquiry relates to all materials and supplies of every description and fuel used during the year covered by the report for any purpose in connection with the development or operation of the mine or quarry. If freight paid on materials is kept in a separate account, enter in the proper line below; otherwise include the cost in answers to the first two items. Include in the first item the cost of the following materials: Lumber and timber used for repairs, mine supports, track ties, and all other purposes; iron and steel for blacksmithing, rails, frogs, sleepers, etc., for tracks and repairs; renewals and repairs of tools; explosives and oil used directly or sold to employees; water for boilers and other purposes; machinery supplies, etc.

Total cost of all materials (other than fuel) and supplies used during the year........ $........

Cost of fuel and rent of power........ $........

Amount paid, if any, for freight on above which has not already been included........ $........

Total cost of materials, supplies, and fuel, and freight on same........ $........

9. *Miscellaneous expenses: Amount paid during the year for the following items.* This should include all items of expense incident to the year's business not accounted for under Inquiries 7 and 8. It should not include interest, whether on bonds or otherwise, or dividends on stock, or allowances for depreciation.

Rent and royalties........ $........
Include amounts paid for rent of mine or quarry, and plant and buildings thereon, royalty on product, and for tunnel, water, transportation, and drainage privileges.

Taxes........ $........

Contract work not included in answer to Inquiry 7........ $........
Include tunneling, shaft sinking, boring test holes, etc., during the year, if not done by employees hired directly by this operator.

Rent of offices and buildings, other than at mine or quarry, use of patents, insurance, ordinary repairs of buildings and machinery, advertising, damages, traveling expenses, and all other sundry expenses........ $........

Total........ $........

10. *Development work*........ $........
Give total cost of all development work during the year, whether done directly by regular employees or by contract, which cost should be included in answers to Inquiries 7, 8, and 9.

11. *Power: Mechanical power employed in or about the mine or quarry.* Give all mechanical power employed, either owned or rented, including the number and horsepower of all engines, motors, water wheels, etc., used for hoisting, ventilating, pumping, or other purposes.

CLASS.	Number.	Total horsepower.
a. Power owned:		
Engines: Steam........	....	....
Gas (include all internal-combustion engines)........	....	....
Water wheels (irrespective of ownership of water power)........	....	....
Water motors (irrespective of ownership of water supply)........	....	....
Other power (specify kind)........	....	....
Total........	....	....
Electric motors (run by current generated by establishment reporting)........	....	....
b. Power rented *from* other establishments:		
Electric motors (include motors owned by the establishment but operated by rented power)........	....	....
Other power (specify kind)........	....	....

c. Name and address of establishment supplying rented power........

....

d. Name of stream or lake from which water power is obtained to generate power, whether direct or electric.
Give answer regardless of question whether power is owned or rented from others.

....

12. *Remarks:*........

....

CERTIFICATE: *This is to certify,* that the information contained in this schedule and in the supplemental schedule is complete and correct, to the best of my knowledge and belief.

.... (Signature of person furnishing the information.)

.... (Signature of Special Agent or Enumerator.)

.... (Title and address.)

DEPARTMENT OF COMMERCE AND LABOR, BUREAU OF THE CENSUS.

8—1713 [KK 55—324]

ADMINISTRATIVE AND GENERAL OFFICES, 1909.

SUPPLEMENTAL SCHEDULE.

Name of company or owner........

General office: State........ City or town........ Street and No. ....

(The statement relative to confidential treatment of information furnished in the General Schedules applies equally to information furnished in this schedule.)

When two or more manufacturing plants, mines, quarries, or reduction works are operated from a central office, the capital, employees, and expenses of such office which can not be assigned to any of the plants should be reported on this schedule. *No data reported in this schedule should be included in the reports for the different* plants, for which separate reports are to be made.

1. *Capital invested:* Amount of capital invested—owned and borrowed. The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If lands or buildings are rented, that fact should be stated and no value given. If a part of the land or buildings is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do *not* include securities and loans representing investments in other enterprises.

Land, buildings, machinery, and tools........ $........

Materials, stocks in process, finished products, fuel, and miscellaneous supplies........ $........

Cash, plus trading and operating accounts and bills receivable........ $........

Total........ $........

2. *Salaried employees and wage earners:* Number, December 15, 1909, as per pay roll. Account for all persons not included in the separate reports for the individual plants. If data are not obtainable for the day or month mentioned, give the data for the nearest representative or normal day, and state day and month here: ....

	Men.	*Women.*
Salaried officers of corporations........	....	....
Superintendents, managers, engineers, and other technical experts........	....	....
Clerks, stenographers, salesmen, and other salaried employees........	....	....
Total........	....	....
Other employees, janitors, etc........	....	....

3. *Salary and wage payments:* Total amounts paid in salaries and wages during the period covered by this report. Classification should conform to Inquiry 2. Do not include amount paid for contract work, if not done by the regular employees, as the amount paid for such work should be reported under Inquiry 4.

Salaried officers of corporations........ $........

Superintendents, managers, engineers, and other technical experts. $........

Clerks, stenographers, salesmen, and other salaried employees........ $........

Other employees, janitors, etc........ $........

Total........ $........

4. *Miscellaneous expenses:* All items of general expenses not accounted for under Inquiry 3, or included in the separate reports for the individual plants, must be reported here. It should *not* include interest, whether on bonds or otherwise, or dividends on stock, or allowances for depreciation.

Taxes { *a.* Internal revenue (Federal)................................ $........

Taxes { *b.* Other.. $........

Amount paid for rent of offices and buildings, rent of machinery, royalties, use of patents, insurance, advertising, office supplies, law expenses, injuries, and damages, telegraph and telephone service, gas, and all other sundries not reported elsewhere........ $........

Contract work not included in answer to Inquiry 3................ $........

Total.. $........

5. *Name and location of the manufacturing plants, mines, quarries, or reduction works controlled from the office represented by this report:* If there is not sufficient space here, give information on additional sheets and attach.

Name	Location
....	....
....	....

CERTIFICATE: *This is to certify* that the infomation contained in this schedule is complete and correct to the best of my knowledge and belief.

.... (Signature of person furnishing information.)

.... (Signature of Special Agent or Enumerator.)

.... (Title and address.)

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF THE CENSUS.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY.

8—1815

[LL 29—382]

IRON MINES, 1909.

SUPPLEMENTAL SCHEDULE.

Name of mine..

Name of operator..

Location of mine: State..................... County..........................

Nearest city or town..

Post-office address of general office.....................Street and No...............

A report must also be made on the General Census Schedule for Mines and Quarries. Both reports should cover the same period.

WASHINGTON, D. C., *January 3, 1910.*

To avoid duplicate inquiries, the Geological Survey, which collects annual statistics of production of minerals, and the Bureau of the Census are cooperating with respect to securing data for the year 1909. This schedule has been prepared by the United States Geological Survey and calls for information desired by the Survey, but such information will also be used by the Bureau of the Census in connection with the census statistics of 1909. The schedules will be presented in most cases by special agents of the Bureau of the Census. All answers will be held absolutely confidential. The Geological Survey will not publish them in such a way as to permit of the identification of the operations of individual establishments, or disclose them to any other individual or to any bureau or department of the Government other than the Census Bureau. The Census Bureau will also treat any information thus secured as subject to the provisions of law regarding confidential treatment contained in the act of Congress of July 2, 1909, for taking the Thirteenth and subsequent decennial censuses, as more fully set forth in the general census schedule of mines and quarries.

E. DANA DURAND,
Director of the Census.

GEO. OTIS SMITH,
Director, U. S. Geological Survey.

1. *Products:*

(*a*) Ore, classified by its mineralogical character: Give quantity of all ore mined, sold, or used during the year.

	Mined (tons, 2,240 lbs.).	Sold or used (tons, 2,240 lbs.).
Limonite or brown hematite	....	....
Red hematite, specular or fossil ore	....	....
Magnetic ore	....	....
Carbonate or black-band ore	....	....
Total	....	....

(*b*) Ore sold or used: Give the value of the ore as entered on the books of the operator. If the ore was used in blast furnaces owned by the same establishment, and it is the practice of the concern to credit the mine department and charge the blast-furnace department with the value of the ore, state the amount so credited and charged. If the accounts are not so kept, estimate the value of the ore f. o. b. mine at the prices ruling in the vicinity and state the amount to be an estimate.

	Quantity (tons, 2,240 lbs.).	Value.
Used in blast furnaces owned by the same operator	....	$.........
Sold f. o. b. mine	....	$.........
Sold f. o. b. lake ports, blast furnaces, or other market	....	$.........

1. *Products*—Continued.

Total gross value	$.........
Deductions on ore sold f. o. b. market:	
Haulage............Per ton (2,240 lbs.) $............ total..	$.........
Freight............Per ton (2,240 lbs.) $............ total..	$.........
Commission and storage expenditures............Per ton (2,240 lbs.) $............ total..	$.........
Total value at mine	$.........

2. *Disposition of ore:* If any of the ore reported under Inquiry 1 was used for fluxing purposes or in the manufacture of paint, state quantity and value so used.

	Quantity (tons 2,240 lbs.).	Value.
For flux	....	$.........
For paint	....	$.........

3. *Stocks:* Report all stocks of iron ore on hand.

	January 1, 1909.	December 31, 1909.
At mine..........Tons (2,240 lbs.)	....	....
At lake ports or elsewhere..........Tons (2,240 lbs.)	....	....

4. *Metallic content of the ore:*

(*a*) Iron, average percentage..

(*b*) Manganese (if the manganese content of the iron ore has a commercial value):

Percentage............; quantity, tons (2,240 lbs.)... ....

Value (included under Inquiry 1)............................ $............

5. *Machinery:*

	Number.
Power drills—Operated by compressed air	....
Operated by other power (specify kind of power used)).	....
Steam shovels	....

6. *Miscellaneous:*

(*a*) Kind of mine, open-pit or underground.................. ....

(*b*) Quantity of ore beneficiated, tons (2,240 lbs.): Roasted..................; concentrated................

7. *Remarks:*

....

....

....

APPENDIX B.—INSTRUCTIONS TO SPECIAL AGENTS.

The following instructions to special agents and clerks employed in taking the census of manufactures and mines and quarries are hereby approved. The canvass will be made under the supervision of the chief statistician for manufactures, and all special agents and clerks engaged in field work must follow the instructions of that official.

There is but a limited time in which to complete this work, and it is essential that all employees exert themselves to the utmost. Those who do good work will be reassigned to other districts and retained in the service until the work is finished.

DAILY REPORTS AND CORRESPONDENCE.

1. **Daily reports.**—All special agents must make daily work reports (Form 8–185c) for every day they are actually employed and for which compensation is claimed, including Sundays, whether work or travel is actually performed on Sunday or not. The daily reports of the agents working under the supervision of chief special agents, together with all schedules taken daily, as herein provided, must be forwarded at the close of the day to the chief special agent in charge of the state, city, or district. Chief special agents must make weekly reports by letter, showing the progress of the work, and must forward daily by registered mail all schedules and daily reports received from the assistant agents. The daily reports and schedules secured by agents who do not work under the direction of a chief special agent must be forwarded daily to the Bureau of the Census.

2. **Registered mail.**—All schedules must be forwarded by registered mail in the return penalty envelope furnished for that purpose.

3. **Requests for supplies.**—Letters relative to the progress of the work and requests for supplies, instructions, etc., must be addressed to the Director of the Census, Washington, D. C. Inquiries or requisitions of any character must not be made upon the daily report, but should be made in a separate letter.

4. **Date of completing work.**—All special agents must give sufficient notice of the date they will complete the work to which they are assigned, so that they may be assigned to other territory without loss of time.

LISTS AND CANVASS OF ESTABLISHMENTS.

5. **Index cards.**—To assist in the canvass of establishments, each special agent will be furnished with index cards containing the names and addresses of establishments located in his district. These cards will be arranged by localities and as nearly as possible in the order in which the special agent will visit the establishments with the least expenditure of time. When it is found necessary to change the prescribed route to save time, or for other reasons, the office must be notified by letter. The special agents who do not work under the supervision of a chief special agent will be furnished a typewritten list of the cards so that they can keep a record of the disposition of each card. This list must be returned to the office upon the completion of the canvass in each district.

6. **Unlisted establishments.**—Although the list so furnished has been made as complete as possible, it has not been practicable to secure absolute accuracy and completeness, and *special agents must be constantly on the alert to discover establishments not named on the cards. They will be held strictly accountable for a complete canvass of the district to which they are assigned.* They must make careful inquiry at each establishment for other manufactories located in that vicinity; and in rural districts they should be on the lookout for establishments in adjoining towns for which they have no cards. Where additional establishments are found, returns must be obtained for them, and in all such cases the entry "No index card for this establishment" must be made on the bottom of the title-page of the schedule.

7. **Cards for nonmanufacturing establishments.**—On the other hand, it is possible that some establishments for which index cards are furnished the agent may be found to be engaged in industries which are to be omitted from the census of manufactures. In such cases a notation must be made on the card and daily report stating the reasons why the report was not secured. It is not sufficient to state: "Not a manufacturing establishment." The character of the business must be briefly and accurately described by such a notation as the following: "Retail confectioner," "Restaurant," "Caterer," "Carpenter shop," "Custom gristmill at remote point," "Dyeing and cleaning wearing apparel," "Drug store," "Product less than $500," etc.

8. **Return of cards.**—Special agents in every instance will be held to a strict accountability for all index cards assigned them. A return must be secured from each establishment or a satisfactory explanation given on the back of the card, such as mentioned in paragraph 7, if the establishment is not a manufacturing establishment, or such as: "General office located at ———, where information must be secured;" or "Establishment removed to ———" (giving date of removal and stating whether manufacturing was done at the place of canvass during the year 1909).

Each index card is numbered and the same number is on the typewritten list of establishments. *This number must in all cases be written in the upper right-hand corner of the schedule and the left-hand margin of the daily report.*

Each card must be returned either attached to the appropriate schedule or with such an explanation as above indicated. For certain large cities, where there is a chief special agent, the cards should be retained by him until the completion of the canvass.

9. **Change in name of establishment.**—If a change has been made in the name or location of the factory since the index card was prepared, or if a report is secured for an establishment under a different name from that appearing on the card, the card must be changed to agree with the new conditions and the daily report must state this change. No erasures, however, are to be made on the index card.

10. **Establishments having office outside district.**—The office has endeavored to ascertain the name and location of all factories for which the census reports will be made from a central office. The cards for such factories are stamped "Central office." The special agents must visit these plants and ascertain definitely whether the census report will or will not be made at the central office. If it will be made at the central office, the agent will take no further action in regard to it, unless the "Central office" also is in his district, but report the fact on his daily report as indicated above. In some cases where plants are controlled from a central office the Bureau of the Census has been advised that the census report will be made at the plant. In such cases the card has been stamped "information at the plant," and the agent will be expected to obtain from the plant all information required to complete the report. In case the special agent discovers an establishment in his district for which the reports must be secured elsewhere, and which has not been indicated on the index card as a "Central office" as above indicated, the facts must be reported on the index card and on the daily report and the card must be returned. It is important that the *precise* address (street num-

ber or room in office building) of such office be stated. If, in such cases, answers to any of the inquiries can be obtained at the factory canvassed, they should be obtained and the partially prepared schedule forwarded with full explanation. These facts should also be reported to the office and to the agent in charge of the city where the report is to be secured by the use of postal cards, Form 8–1619 or 8–1616. The agent will then take no further action with regard to securing the report unless he receives further instructions.

11. **Factories outside agent's district.**—Reports must not be secured from the office of any establishment having no factory within the limits of the district being canvassed unless the index card states that the report must be secured at the office or special instructions are received. In the absence of such instructions it may be assumed that the establishment will make report to the agent for the place where the factory is located.

12. **Additional factories of same owner.**—It will frequently be found that the individual or company reporting to the agent operates also a factory, or factories, outside of the agent's district. Where it is found that reports for such a factory can be secured only at the office the agent is visiting, he should obtain the report and call attention to it on his daily work report, so that proper notice may be given to the agent in the district where the factory is located. Each report of a factory outside the district of the agent must be taken under the local name of such factory and show its location by state, city, or town, etc. The correct location of the factory is of vital importance and must be carefully reported. If, on the other hand, the reports for these outside factories must be secured at the factories themselves, a slip should be attached to the report secured for the local factory, giving the location of each of the outside factories, and the name and the place where the information can be obtained.

13. **Idle establishments.**—All establishments that commenced operations or did any work during the census year ending December 31, 1909, must be reported, whether they were in operation at the time of canvass or at the end of the year 1909 or not. No report should be secured for establishments which were closed or idle during the whole of the census year nor for abandoned or dismantled establishments.

METHOD OF SECURING SCHEDULES.

14. **Mailing of schedules to manufacturers.**—A few days prior to the day when a given concern is to be canvassed the chief special agent (or the local special agent not working under a chief special agent) should mail to the owner a copy of the General Schedule, with the appropriate supplemental schedule if one is required, together with a request (on a form to be furnished by the Census Bureau) that it be filled out for the special agent on his arrival. The envelopes inclosing the schedules and letter from the director will be addressed and arranged in packages corresponding with the arrangement of the index cards. The agents can then mail them as the canvass progresses, so that they will be received by the manufacturer a few days before he calls.

15. **Forwarding of schedules by manufacturers.**—In some cases the manufacturer may (although manufacturers are requested not to do so) have already forwarded his schedule to Washington before the agent arrives. If the agent is satisfied that the schedule has been sent by mail, and if the manufacturer declines to make a duplicate report, he must immediately notify the office by the use of postal card Form 8–1617, enter the fact on his daily report, and make the following entry on the index card: "Report sent by mail." In some cases the replies to the preliminary circular may be confused with the schedule. The agent must be certain that this is not the case before concluding that the report has been mailed. The agent should not accept a promise that the schedule will be sent to him or to Washington later, but should secure it in person.

16. **Schedules previously prepared by manufacturers.**—In case the manufacturer has already filled the schedule when the agent arrives, the agent should question him as to the source and accuracy of the information and should explain the meaning of any question concerning which the manufacturer is in doubt, and generally assure himself that the schedule has been filled out properly.

If a manufacturer insists upon sending his report to the Census Bureau by mail and not give it to the special agent, the agent should see that the schedule is properly prepared, furnish an addressed official envelope, and, if possible, see that the package is deposited in the mail. He must also give the name of the establishment on his daily report, with the statement that the schedule had been sent by mail.

17. **Promptness of agents.**—In many cases the schedule will not be ready when the agent arrives. In that event he should proceed to get the information immediately. The agent should, in every case, secure the schedule on his first visit, or in the case of large or complex establishments requiring more than one visit, should at least begin the actual work of compiling the data on his first visit. For a large majority of establishments the report can be prepared from information obtained from a short conversation. The making of future appointments for the preparation of the report should be avoided, as such appointments are very apt to lead to further delay.

It is not necessary that the agent shall enter into profuse explanations or give time to anything beyond the necessary work of interrogation. He should be prompt and decisive in announcing his object and making his inquiries, but in so doing he should be careful not to arouse antagonism or give offense.

18. **Answers to inquiries to be taken from books of accounts and records.**—The information secured must be accurate. In drafting the schedule every effort has been made to frame the inquiries in such a form that the answers to them can generally be taken directly from the books of accounts and the records of the establishment canvassed. The agent may find a disposition on the part of persons furnishing the information to give general statements or estimates, claiming that they approximate very closely the exact figures. In no case should these general statements or estimates be accepted where it is possible to secure the answers directly from the books of accounts and records. The fact that the consultation of such books and records may involve a greater expenditure of time and trouble is no justification for failure to secure the exact answers in such manner.

In the case of pay rolls and time records it will doubtless be necessary in many cases for the agent to perform the required work in person.

19. **Erroneous statements.**—The special agent must not accept answers which he knows, or has reason to believe, are false. He has a right to a true statement on every matter respecting which he is bound to inquire. In most cases if his informant gives him a round number (e. g., 6,000 or 200,000) it is likely to be only an estimate, and should not be accepted if more precise data can be secured. If any person should persist in making statements which are obviously erroneous, the special agent should enter upon the schedule the facts as nearly as he can ascertain them by his own observation or by inquiry of creditable persons and state how the information was secured. Chief special agents will when necessary take up such particular cases in person.

20. **Compulsory feature of census.**—It will generally be found that the person called upon will give the information without objection or delay. Special agents are therefore cautioned not to obtrude unnecessarily the compulsory feature of the law. Only where the information required by law is positively refused need the penalties of noncompliance be referred to. The special agent will then quietly but firmly point out the consequences of persistent refusal, quoting, if necessary, the provision of the law.

21. **Information confidential.**—Special agents are prohibited by law from delegating to any other person their authority to enter establishments and collect information.

Attention is called to the penal provisions in the census act, one of which provides that information gained by a special agent or by any other employee in the performance of his duties must not be disclosed to any person not authorized to receive the same, under a penalty of $1,000 and imprisonment for two years.

If manufacturers or others furnishing data object to a supposed disclosure of the secrets of their business, the special agent should assure them that the results of their individual business will not be made public and should call attention to the statement to that effect on the title-page of the schedule and to the provisions of the law. The agent may also explain that the information will not be used for the purposes of taxation, nor in any manner to identify the operations of the individual establishments, and will not be disclosed to any other bureau of the Federal Government. The intent of the law, which will be strictly carried out, is to prevent the disclosure of information which might operate to the detriment in any way of the person or establishment supplying the same.

WHAT CONSTITUTES AN ESTABLISHMENT—DIVIDED ESTABLISHMENTS.

22. **Definition of establishment.**—The term "establishment," as a unit of enumeration for this census, is deemed to be one or more factories, mills, or plants owned or controlled by one individual, partnership, corporation, or other owner, located in the same town or city, and for which one set of books of account is kept.

23. **Separate sets of books.**—When the owner operates two or more plants in the same town or city, and maintains separate sets of books for each, they should be treated as separate establishments, but if one set of books only is kept they should be treated as one establishment.

24. **Separation of localities.**—It is necessary, however, to publish separate statistics for the different states and for all cities with a population of 8,000 and over. Therefore, when the same owner operates two or more plants in different states or cities or operates one plant in a city and another outside of that city, *only one set of books being kept for all the plants*, one report must be prepared covering the entire establishment, and also additional reports covering the plant or plants in each state or city. All estimates necessary to make the complete reports for the separate plants must be carefully prepared in consultation with the person who furnishes the information and marked "Estimate."

25. **Separation of industries.**—It is also necessary to publish separately the statistics for the different industries as defined by the Census Bureau. Therefore, when two or more distinct industries, such as those indicated by the supplemental schedules, are carried on under the same ownership with only a single set of books, one report must be prepared covering the entire establishment, and additional separate reports for the different industries must be prepared in the same way as described in the preceding paragraph.

26. **Reports for same ownership.**—All reports for plants conducted under the same ownership, whether covered by a single set of books or by separate sets of books, must be fastened together and proper notation made of the fact in the daily report of the special agent.

27. **Establishments engaged in manufacturing and also in other business.**—A considerable number of establishments will be found which are engaged in manufacturing, and at the same time in some other nonmanufacturing branch of business or industry, with only a single set of books covering the combined business. In those cases where the other branches of business are incidental to the manufacturing business, or are insignificant in importance, the schedule should cover the entire business. In other cases where the other business is of importance the agent should prepare a schedule covering the manufacturing, following the instructions in paragraph 25.

The following cases will illustrate such combinations of manufacture with other industries:

Coal mining and the manufacture of coke.

Mining of iron ore and the manufacture of pig iron.

Cultivation of vegetables and fruits and canning of the same.

Catching of fish and oysters and canning of the same.

In these and similar cases a separate report for the manufacturing business must be carefully prepared, all estimates marked "Estimate," and the basis of the estimates described under "Remarks" or on a separate sheet. The value of materials produced by the establishment itself and used in its manufacturing may be taken either at the cost of production, including freight charges to point of consumption, or at the market value at the point of consumption, but preferably at the market value.

PREPARATION OF THE GENERAL SCHEDULE.

28. **General schedule required for each establishment.**—A general schedule must be prepared for each establishment reported except sawmills and, in addition, such special supplemental schedule or schedules as may apply to the industry, if any.

29. **Instructions to be strictly followed.**—The instructions printed on these schedules must be strictly followed by the agent. In a few industries instructions regarding certain points in the General Schedule are stated in the supplemental schedule. The instructions set forth below are additional to those there given and in no way modify them.

INQUIRY 1.—DESCRIPTION OF ESTABLISHMENT.

30. **Name of establishment.**—As separate reports are to be obtained for different establishments when conducted under the same ownership, the name of the establishment should be given as well as that of the owner.

31. **Name of owner.**—The answer desired is the name of the person, partnership, corporation, etc., operating the establishment, whether such operator owns the plant or merely leases it.

32. **Location of establishment.**—The exact location of the plant or plants covered by the report must be shown by the answers to this inquiry, and to the one *"Is establishment located within the corporate limits of the city or town?"* Precise information relative to these points must be given in order that the statistics of manufactures may be presented by cities or other civil divisions. When the establishment is on the boundary line, or part of the plant is located in one civil division and part in another, or there are any other complications, full information on this subject must be given under "Remarks."

33. **Post-office address of the general office.**—For the majority of the establishments this will be the same as the *Location of the establishment*, but in many cases they are different and inquiry should be made to develop this fact.

34. **Period covered by this report.**—Wherever possible the report should cover a period of twelve months, whether the establishment was in active operation during the whole of such period or not, and the answer to this question should show the whole period covered. In case, however, the establishment has been in active operation only a small portion of the twelve months, as often happens in seasonal industries such as canning, etc., that fact should be stated under "Remarks." In the case of establishments beginning operations for the first time during the year it will not be possible, however, to make the report cover the whole of the year. In such cases the answer to this question should show the period actually covered, and the fact should be noted under "Remarks" that the data relate to an establishment which began operations during the year.

It will be found that the ownership of some of the establishments canvassed has changed hands during the year. If the present proprietor can furnish data for the entire period they should be obtained from him, and the report should thus cover the combined operations of the establishment during the year while under the management of his predecessor as well as under his own management. If this can not be done the former proprietor should be located and the report for the other portion of the year obtained from him. If this is impracticable the present owner should be asked to give such information as he possesses regarding the general character and volume of business under the former owner, and the facts should be reported by the agent on a sheet attached to the schedule covering the present ownership.

The period covered, where possible, should be that of the year ending December 31, 1909. In the majority of cases the data can be secured for this year, for the business year of most establishments will correspond to the calendar year. Where, however, the business year of the establishment does not correspond to the calendar year, the data may be secured for such completed business year as corresponds most nearly to the calendar year 1909.

35. **Character of organization.**—This must be stated as one of the five kinds named in the schedule, or, if it is some other form, such other form must be definitely described.

36. **Number of proprietors and partnership members.**—The answer must show the number of individual proprietors and the number of members of all forms of ownership except incorporated companies.

37. **Number of stockholders, if an incorporated organization.**—If the number of stockholders on the last day of the period covered by the report can not be obtained, secure number on nearest day to such date, and give date to which the number relates in parentheses after the number of stockholders.

38. **Character of industry.**—As the statistics of manufactures will be presented by kinds and by classes of industries, it is essential that this inquiry be answered in such a way that the precise character of the work performed by each establishment can be clearly determined. In those cases where the establishment covers more than one distinct kind of manufacturing operations or products, or is engaged in any nonmanufacturing work, such as transportation, mining, etc., especial care should be exercised to show in the answer to this inquiry all the lines of work engaged in or all the products made. If necessary, additional information may be given under "Remarks." In all cases the particular articles produced should be named in the order of their importance; for example, "cigars, cigarettes, smoking and chewing tobacco" or "pig iron, billets, bars and wire." A general description, such as "tobacco factory" or "iron and steel," is not sufficiently specific. For the manufacture of clothing, neckwear, handkerchiefs, etc., state definitely whether "men's," "women's," or "children's."

INQUIRY 2.—TIME IN OPERATION AND HOURS WORKED.

39. **Days in operation during the year.**—The answer to this inquiry should show the entire number of days the establishment or any portion of it was in actual operation, whether working full time, part time, or overtime—that is, if the establishment was operated on a given day for 1 hour, 8 hours, or by two or more shifts for the entire 24 hours, the answer would be the same, namely, *1 day*. The full possible working time of an establishment, operating continuously, except on Sundays and holidays, is about 307 days, depending on the number of holidays.

40. **Number of hours normally worked by wage earners.**—"Per shift" refers to the number of hours worked by each set of wage earners, not the total number of hours worked per day, when two or more sets of workmen were employed. The number of hours worked "per week" is called for in order that the practice of the establishment relative to the working of only half a day or any other fraction of a day on Saturdays or under other circumstances may be brought out.

INQUIRY 3.—CAPITAL INVESTED.

41. **Capital invested: Amount of capital invested—owned and borrowed.**—The purpose of this inquiry is to determine the value of property employed by the establishment for the purposes of its productive operation, but not including rented property. Therefore both capital owned by the operator and capital borrowed by him is to be included; in other words, no deduction is to be made from the value of the assets by reason of liabilities for money due others.

The sum of the answers to the three items should show the total amount of capital invested by the operator of the establishment. The answer to item 3 should therefore include everything in the way of capital invested not included in answers to items 1 and 2. "Trading and operating accounts" refers to open accounts receivable.

42. **Depreciation.**—If the books of the establishment show specifically an item of depreciation charged against land, buildings, machinery, and tools, deduction of such depreciation should be made and the net value resulting after such deduction be given. If, however, the books are not kept so as to show clearly this item of depreciation, then this item should be disregarded and no deduction be made.

43. **Patent rights and good will** must not be considered as a part of the capital, except in so far as the value of these items may be included in other items as carried on the books of the establishment. If the books of the establishment, however, in any way segregate or report separately the value of such patent rights and good will, such value must not be included in any of the answers called for by Inquiry 3, but should be reported separately under "Remarks."

44. **Separation of manufacturing from other investments.**—In case manufacturing is carried on in connection with some other business, such as mining, the operation of an electric station or a railroad, and where only one set of books is kept for the entire business, the instructions in paragraph 27 should be followed. In case, as will sometimes happen, there are separate accounts showing the operation of different branches of the business, but only one account of the capital invested, the total investment for the combined business should be given in the schedule according to the books, and the proportion represented by the manufacturing business should be stated in the margin as nearly as it can be estimated, either in the form of a percentage of the total or in an estimated amount in dollars.

INQUIRIES 4 AND 5.—SALARIED EMPLOYEES—WAGE EARNERS, INCLUDING PIECEWORKERS.

45. **Purpose of inquiries—Selection of date.**—The purpose of these inquiries is to determine the number of persons employed on a given date by the manufacturing establishments of the country. So far as practicable, such data should relate to December 15, 1909. Cases will occur, however, where the information for this date can not or should not be obtained, due either to the fact that the establishment was not in operation on that date, that the book or time records for that date are not obtainable, or that at that time the number of employees was *very much* below the number to whom the establishment normally gives employment. In all such cases the records for the day nearest such date for which data can be obtained that are representative of the normal condition of the establishment as regards employment of labor should be taken. In the case of seasonal industries it may be necessary to secure data for a date several months removed from December 15. In those cases, where a date other than December 15, 1909, has to be selected, the tendency or inclination of the officers of the establishment furnishing the information will be to refer you to a day of maximum employment. This should be guarded against and a day of normal or average employment selected.

46. **Total number employed on a given day, not total number whose names appear on a given pay roll, desired.**—Note carefully that what is desired is the total number employed on a given day. This will in most cases be a number somewhat, and in certain cases considerably, smaller than the number of names appearing on the pay rolls consulted, owing to the fact that during the period covered by the pay rolls all will not be continuously employed, a considerable number working only certain of the days and others working on other days. Probably in the majority of cases the pay rolls and time records are kept in such a way that it is possible to get the record for a particular day, in which case the record for such a single day should be taken. In case this can not be done, the total number on the pay roll should be counted and noted on the margin, and a careful estimate of the average number employed during the period covered by the pay roll should be inserted in the blank spaces in the schedule.

47. **When estimates may be accepted.**—In case pay rolls or other records are not available for any normal or representative day, a careful estimate must be taken in substitution for data from records, and the fact that the data are based on such an estimate should be stated on the margin of the schedule.

In the case of establishments employing on an average not to exceed 25 persons, it is desirable but not imperative to consult the pay rolls or books to secure answers to these inquiries.

48. **Segregation according to sex and age periods.**—In all cases the total number of salaried employees and wage earners should be determined before the attempt is made to segregate them

according to sex and age period. In the majority of cases the records of the establishment will not show this segregation, and it will have to be made by means of a careful estimate by the officers, superintendents, foremen, or others who have personal knowledge or charge of the labor force. Great care should be exercised by the agent in seeing that this segregation is made by the person or persons most competent to do so and that it is carefully done.

49. **Officers of corporations** who receive no salaries, and directors who receive only a fee for attending meetings, must not be reported. All salaried officials, such as the president, vice president, secretary, and treasurer, who devote all or a considerable proportion of their time to the business, must be included.

50. **Classification of foremen and overseers.**—The three subinquiries of Inquiry 4 are intended to embrace all salaried, clerical, and supervisory employees as distinguished from wage earners. In some industries it is difficult to preserve this distinction, especially as to foremen and overseers. Foremen and overseers who have charge of a few workmen, but with little additional responsibility or pay, and who at the same time perform work similar to that of other wage earners, are not to be included as salaried employees; to come within the scope of Inquiry 4 they must devote the whole or the greater part of their time to supervision.

51. **Traveling salesmen.**—If the manufacturing department of an establishment turns over its product to a separate selling department at a given value or price, and if this factory value is reported in answer to Inquiry 10, instead of the selling value to the public, the traveling and other salesmen would be employed by the selling department, hence their number, salaries, and traveling expenses should not be reported in this schedule. In case the selling value of the product is reported in answer to Inquiry 10, the salesmen of the establishment are to be reported in Inquiry 4 and their salaries in Inquiry 7, and the traveling expenses and other expenses of selling must be included in the miscellaneous expenses reported in answer to Inquiry 9.

52. **Wage earners employed indirectly—Employees of independent contractors.**—In some establishments wage earners who actually work for the establishment may not appear upon its pay rolls, being indirectly employed through superintendents, heads of departments, foremen, and the like. Careful inquiry must be made to ascertain such conditions, and the number of persons so employed must be estimated as nearly as possible, and the basis of the estimate noted on the schedule.

On the other hand, answers to this inquiry should not include the employees of independent contractors having separate establishments, who perform work under contract for the establishment reporting. If such contractors are engaged in manufacturing, they should be reported in a separate schedule which will account for their employees.

53. **Convicts** employed under contract, piece price, or other system must not be included in reply to Inquiries 5, 6, or 7.

INQUIRY 6.—WAGE EARNERS EACH MONTH.

54. **Number on 15th day of month.**—All of the instructions for Inquiries 4 and 5, except those pertaining to the segregation of employees and wage earners by sex and age periods, apply to this inquiry. Make entries for all months covered by the report. Take the 15th day of each month unless it falls on a Sunday or unless the pay roll for that day is lost. If the establishment was shut down on the 15th of the month, select a day nearest to that day for which a satisfactory record can be obtained and give the date selected.

INQUIRY 7.—SALARY AND WAGE PAYMENTS.

55. **Number employed.**—The instructions under Inquiries 4, 5, and 6 should be borne in mind in connection with Inquiry 7.

56. **Be careful to report separately** the amount paid the four classes of employees named. The total must be the entire amount paid as salaries and wages during the period covered by the report.

57. **Payments to contractors not to be included.**—Do not include amounts paid for contract work done by independent contractors, by persons working at their homes on materials furnished by the establishment, or by convict labor, but report such amounts in answer to Inquiry 9.

58. **Board and rent** when furnished as part compensation of employees should not be included as wages, but the expenses incurred by the establishment in furnishing the same should be included with other miscellaneous expenses in Inquiry 9, and the fact that employees, or part of them, receive board or rent free should be noted at the bottom of page 2 of the schedule.

59. **Commissions paid to traveling salesmen, bonuses, or percentages of profits** paid to officers, superintendents, foremen, or wage earners should be included in the amount of salaries or wages. This does not, of course, include dividends paid on stock in a corporation which officers, employees, or wage earners may hold.

INQUIRY 8.—MATERIALS, MILL SUPPLIES, AND FUEL.

60. **Definition of materials.**—The answer to this inquiry should give the cost of all materials and mill supplies of every description, whether raw or partly manufactured, and whether entering into the product, used as containers, or consumed in the process of manufacture.

61. **Materials used during year desired, not those purchased.**—Note especially that what is desired is the cost of the materials, mill supplies, and fuel used during the year, not the cost of those purchased during the year, which may be an entirely different thing. If the books do not show directly the cost of the materials consumed during the year, it should be computed by adding to the amount paid for materials purchased during the year any decrease in the inventory of materials on hand at the end of the year as compared with the beginning, or by deducting the increase in such inventory.

If the books of the establishment do not show the values of these articles on hand at the beginning and end of the year, but do show the cost of all these articles purchased or acquired during the year, and it is reasonably certain that there is no substantial difference between the values on hand at the beginning and at the end of the year, the figures showing the cost of these articles acquired during the year may be used in answer to this inquiry.

The first method, however, should be employed whenever possible. If the latter method is used, the fact should be stated on the margin of the schedule.

62. **Materials furnished by same establishment.**—Materials and mill supplies produced by the establishment itself during the year covered by the report and used by it in its further operations should not be duplicated by being again reported in its new form as material, since the cost of their production is included as labor or miscellaneous expenses under Inquiries 7 and 9. An illustration of this may be found in the manufacture of textiles, where yarn may be shown as material, but should not embrace any that was made during the year by the establishment reporting.

If the establishment produces certain materials both for its own use and for sale, that part used should not be included for the reason just given, but that part produced for sale should be included as a product in answer to Inquiry 10.

Where materials are obtained from another plant operated under the same ownership and for which a separate schedule is required, they should be reported as products in answer to Inquiry 10 on the schedule relating to the establishment producing them, and as materials in answer to Inquiry 8 on the schedule relating to the establishment acquiring them, and the value assigned them should be their cost to such establishment as shown on its books. If, however, no charge is made on the books, an estimate of the market value of the material at the works consuming it should be made and indicated as an estimate. For example, a concern may own a wood-pulp mill in one state and a paper mill in another state, using the pulp from the pulp mill. If the paper mill is charged for the pulp, either at cost or at a market value or an arbitrary value, the figure actually charged should be used; otherwise the estimated market value of the pulp delivered at the paper mill.

In all cases of such transfer of the product from one establishment to another establishment under the same ownership or general management, and where the two are not treated by their owners or operators as independent establishments, with independent operating accounts, give, under the head of "Remarks," such information regarding the legal and working arrangements of the two establishments, and particularly the financial system followed in the utilization by one establishment of the products of another related one, as will enable the office to determine the nature of this relationship and assure itself that the method followed in filling the schedule for one of the establishments harmonizes with that followed in filling the schedule for the other, as this latter schedule may be secured by a different agent.

63. **Cost of fuel and rent of power.**—Include here all fuel used, whether for heat, light, or power, or for the process of manufacture itself, as in the case of coal used in gas plants. There are some establishments which use coal for producing coke or gas which they subsequently burn, and which may have records of the quantity and value of coke or gas consumed, as well as of the coal. In such cases report only the value of the coal consumed. (See instructions for Inquiry 12, par. 85.)

64. **Freight on materials.**—In many cases the cost of the materials will include the freight. If this is not the case, the total amount paid for freight on materials should be given in answer to this inquiry. Do not here include freight on finished products.

65. **Names of principal materials used.**—Name the materials as nearly as possible in the order of their importance as elements of cost. Specific information is required, as it will be of assistance in the classification of the establishment. For example, "chemicals" should not be reported as materials for a chemical establishment, but the names of the different ingredients consumed should be given in answer to this inquiry. The character of the materials should be consistent with the products reported in answer to Inquiry 10.

INQUIRY 9.—MISCELLANEOUS EXPENSES.

66. **Rent.**—If the general office, or other office buildings, are rented and are located elsewhere than at the factory, and the factory or part of it is also rented, the total rent being carried as one item on the books, the amount of rent chargeable to each service should be ascertained and entered separately in reply to the first and third subquestions of the inquiry, respectively. In case a rented factory has an office as part of the premises, report the entire rent under the first subdivision.

67. **Taxes.**—Internal revenue is a Federal tax and will be reported for comparatively few industries, such as the manufacture of cigars and tobacco, liquors, and oleomargarine. If the value of the product reported in answer to Inquiry 10 includes the amount of internal revenue, write the words "included in value of product," or if not so included, write "not included in value of product."

Other taxes must include all state, county, or city taxes, licenses, etc.

68. **Other miscellaneous expenses.**—The answer to the third item of this inquiry should include all expenses, *other than interest, dividends, and depreciation* that are incident to the business during the year. "Ordinary repairs of buildings and machinery" covers expense for such emergencies as repairing a leaky roof, a broken chimney, a break in the water pipes, repairing or putting in a new door or window, putting up temporary partitions, repairing or replacing broken or worn-out machinery, etc., but it does not include the erection of new buildings or other permanent additions to the plant, which must be included as capital.

69. **Contract work.**—The answer to this inquiry must include only the expenditures for work on the product reported in answer to Inquiry 10, and done by or under the supervision of contractors or by persons working at their homes independently of the regular employees; it must not include any part of the amount reported under salaries or wages, Inquiry 7. (See also pars. 52 and 57.)

INQUIRY 10.—PRODUCTS.

70. **Intermediate products not desired—Stocks in process.**—The product of any establishment, from the census standpoint, is the finished product in its condition as prepared for sale. The value of intermediate products is not to be stated in reply to this inquiry (except in the case of those establishments which keep an accurate account of the value of stocks *in process of manufacture*, and which should report the increase in that value at the end of the year, as compared with the beginning of the year, as part of the value of the product of the year or deduct the decrease in such stocks from the product of the year). For instance, a cotton or woolen mill may spin the yarn from which its goods are made, and in this case the manufacture of the yarn would be only an intermediate process in the manufacture of cloth, and the value of the yarn produced during the year would not show separately in this report. Should part of the yarn spun be sold as yarn it becomes a true product.

71. **Production, not sales, desired.**—This inquiry calls for the value of the products *made* during the year, *not* the value of the sales. In many establishments the sales during the year may be considerably greater or considerably less than the product of the year. Where the manufacturer has not already records showing directly the product of the year, but has records showing the sales, the product for the year can be ascertained by adding to the sales the increase in the stock of finished goods (or stocks in process of manufacture) on hand at the end of the year as compared with the beginning of the year, or by deducting from the sales the decrease in such stocks. In other words, the sales account and the inventory together must be consulted in order to obtain the product of the year.

72. **Selling value desired.**—The value of the product desired is not the cost of manufacturing it, but the selling value or price at the factory, which includes the profit of the manufacturer.

73. **Exclusion of freight.**—The value desired is the value at the works. In many cases manufacturers sell all or part of their goods delivered at distant points and themselves pay the freight. In such cases the freight charges should, if possible, be deducted from the gross receipts from sales, and should not be reported under "Miscellaneous expenses."

74. **Deduction of discounts.**—Manufacturers frequently allow discounts from their gross selling prices. In such cases the net value obtained by deducting the discounts should be secured, if possible, and not the gross selling price.

75. **Selling departments.**—In some cases establishments turn over their product from the manufacturing department to a selling department at a given value. This factory value may be taken as the value of the product rather than the final amount realized by the selling department. In case the value reported represents the price finally received for the goods from the public, all selling expenses, advertising, salesmen's salaries and commissions, etc., should be included in Inquiry 7 or Inquiry 9, but in case the value given is the factory value at which the product is turned over to the selling department, such selling expenses should not be reported in this schedule.

76. **Exceptions in certain industries.**—The above general rules regarding the basis for the value of products are subject to some slight modification in a few industries, as indicated by the supplemental schedule for those industries, and before reporting the value of the products on the General Schedule the supplemental schedule, if one is used for the industry, should be consulted. In railroad repair shops, for instance, the work is not, as a rule, performed for others, nor is the product sold to others, but is for the use and benefit of the company itself. In such case the value of the product will represent simply the amount of expenditure for labor, materials, and miscellaneous expenses.

77. **Itemization of products.**—Space is left on the General Schedule for an enumeration of some of the important items comprising

the total product. The total product should in all cases be taken from bookkeeping records, but the records will not always show the value of the separate items of product. In such cases careful estimates for the principal items will be accepted, but the fact that they are estimates should be noted on the schedule, and the sum of the items must correspond to the total. It is not necessary to give a large number of minor items.

78. **Quantities.**—Quantities of output are not desired in the General Schedule except for the following industries, where they must be reported:

Manufacture of cigars (number of thousands).
Distilled spirits (number of gallons).
Malt liquors (number of barrels).

79. **Custom and job work.**—Under "All other products" report the amount received, or the charges, for custom work, repairing, and job work of all kinds, but not including contract work on materials furnished by other manufacturing establishments. (See par. 69.)

80. **Contract work for others.**—Many establishments do work for other establishments which furnish the whole or part of the materials used. The amount received for such contract work should always be shown upon a separate line under "Products" as "Contract work for other manufacturing establishments." Work done under contract, where the person for whom the work is done does not furnish any part of the material, should not be reported as "Contract work," but included in the regular product of the establishment.

81. **Expenses exceeding value of product.**—It will sometimes happen that the sum of the totals of Inquiries 7, 8, and 9 is in excess of the value of the product reported for Inquiry 10, indicating a loss. In such cases the agent should call the attention of the person furnishing the information to the fact, which may be due to error. If there is an error, it should be corrected. If, however, the figures are correct, the word "Correct" should be written under the total value of product and a memorandum made explaining the conditions which caused the loss.

INQUIRY 11.—POWER.

82. **Power owned.**—Where electric motors are not owned but are operated by electricity generated by the establishment, they should be included under "Power owned."

83. **Power rented.**—Subdivision (*b*) must show all power used by the establishment reporting which comes from some *outside* source.

INQUIRY 12.—FUEL USED.

84. **Cost of fuel.**—The total cost of all fuel used must be reported in answer to Inquiry 8. The cost includes amounts paid for power, heat, and light, and therefore may have no relation to the quantities reported under Inquiry 12. Separate totals must be given for each variety of fuel. The quantity of gas reported must include both natural and manufactured, the kind of gas used being stated.

85. **Coke and gas made by establishment.**—Some establishments make coke or gas and use it in its further manufacturing processes. In such cases report the total quantity of coal used, whether to make gas or coke or otherwise, and also the quantity of coke or gas used, but be sure to indicate that the coke or gas is made from the coal reported.

INQUIRY 13.—REMARKS.

86. **Explanation required.**—The instructions for several of the inquiries indicate the character of the information that should be given here. The space, however, is reserved, primarily, for the agent to explain unusual conditions connected with the inquiries or with the report as a whole. It is hoped that such explanation will obviate the necessity of the office corresponding with the establishment. Upon examining the schedule, after answers have been made to all the inquiries, the agents are liable to detect inconsistencies. If it is impossible to correct these inconsistencies, an explanation of them should be given. All of the schedules are edited before they are tabulated, and explanations of such inconsistencies are of great assistance to the editor.

These statements should be as brief and direct as possible. At the same time they should cover all pertinent facts, and, if necessary, use should be made of an additional blank sheet.

Do not use this space for correspondence or remarks not pertinent to the schedule.

CERTIFICATE.

87. **Signature required.**—Each report must be signed by the person responsible for the information furnished, and his official title and address must also be given. The agent or enumerator who secures the return should also sign this certificate. In all cases where a supplemental schedule accompanies the General Schedule the attention of the person signing the schedule must be called to both, as he certifies to the correctness of the statistics contained in both.

88. **Administrative and general office schedule.**—Some companies control a number of factories from a central office, and do not make a distribution of the expenses of such office among the different plants. In such cases the capital of the company as a whole, the employees at the central office, their salaries and wages, and the miscellaneous expenses, none of which are included in the reports for the plants, must be shown in a report prepared on Form KK55-324. The inquiries on this schedule correspond with the inquiries on the same subjects in the General Schedule for manufactures and for mines and quarries, and the instructions given for them should be followed. *Be careful not to duplicate any of these amounts in the reports for any of the separate plants.*

MINES AND QUARRIES.

89. **Instructions for census of manufactures apply.**—All of the foregoing instructions in regard to methods and practices to be followed by the field force in collecting statistics for manufactures apply, where pertinent, also to mines, quarries, petroleum and natural gas wells. The following instructions are additional to them and for the purpose of covering certain special features of the schedules for these latter industries.

90. **Unit of enumeration.**—The mine, quarry, or well is the unit of enumeration, corresponding with the establishment for manufactures, and the instructions, paragraphs 22 to 26, concerning separate reports for establishments must be followed.

91. **Mines and quarries to be reported.**—All classes of mines, quarries, and petroleum and gas wells that were in operation during any portion of the year (including those operated by penal, eleemosynary, and educational institutions), except as set forth in paragraph 92, must be reported, irrespective of their size or annual output.

92. **Operations to be omitted from the census**—

(*a*) Mines, quarries, or wells that were idle during the entire year.

(*b*) Small bituminous coal banks producing less than 1,000 tons annually.

(*c*) Individual placer gold miners and miners hunting for precious stones who employ no help.

(*d*) Prospectors.

(*e*) The digging of gravel for the construction of roads and for building operations.

(*f*) The digging or dredging of sand for building operations or other purposes.

(*g*) The production of mineral waters.

93. **Development work to be reported.**—Mines at which development work was carried on during the year must be reported, although no metal was produced. (See par. 102.)

94. **Mining and manufacturing.**—There are several branches of mining in which the mineral products do not reach the market in the crude condition, but are subjected to certain manufacturing processes at the mine or quarry, such as crushing, separating, washing, burning, calcining, or concentrating before being regarded as

marketable commodities. In such cases the general and supplemental mining schedules should cover the entire work of mining the crude material and its preparation for the market. There are some exceptions to this general rule to which special attention is called:

Clay mining and clay products.—The mining of clay and the manufacture of clay products are generally carried on in the same establishment; in such cases the entire operations should be reported on the general and supplemental schedules for manufactures. Only where the clay is mined and sold as such, and no manufacturing done, is a report to be made on the general and supplemental schedules for mines.

Limestone and lime.—The quarrying of limestone and the burning of the stone into lime are usually done by the same establishment, and the entire operations should be reported on the general and supplemental schedules for manufactures. Where limestone is quarried and sold as such (not burned into lime at the quarry), a report should be made on the general and supplemental schedules for mines.

Mineral pigments and mineral paints.—The production of natural mineral pigments and the cleaning, grinding, or roasting of the same should be reported on the general and supplemental schedules for mines. The manufactured mineral paints should be reported on the general and supplemental schedules for manufactures.

GENERAL SCHEDULE FOR MINES AND QUARRIES.

95. **General Schedule required for each mine and quarry.**—This schedule corresponds to the General Schedule for manufactures, and all mines and quarries and mills engaged in dressing and reducing metalliferous ores must be reported on it, except as noted in paragraphs 105, 114, and 115. The general instructions in paragraphs 28 to 87 must be followed as far as applicable in the preparation of reports on this schedule. Care should also be taken to follow the instructions contained in paragraph 27 concerning the separation of the values represented by the mining industry from those for other industries carried on in connection with the mine. Special attention is called to the following inquiries, which differ in important respects from those on the schedule for manufactures, and for which some additional information may be of assistance in preparing the reports.

Inquiry 5.—Wage Earners, Including Employees Paid by Ton, Car, Yard, or other Unit.

96. **Number by classes.**—The separation of the number of the different classes of employees and the number employed above and below ground can usually be made from the pay roll. It is desired to account for the total number of persons employed in or about the mine or quarry, and care must therefore be taken to report the number employed by contractors, lessees, etc. While this number can not be obtained from the operator's pay roll, he should be able to give an estimate, and this must be accepted unless the exact number can be obtained from the contractor. (See par. 98.)

Miners compensated by share of product may not appear on the regular pay roll as wage earners. Some record, however, is undoubtedly kept of such persons, and the number should be ascertained and included with the total number reported as "employed otherwise, as by contractors, etc." This number should of course include the persons employed by the block lessees, leasers, etc. (See par. 99.)

Inquiry should also be made as to whether any women are employed in and about the mine or quarry, and the number must be given in answer to the inquiry concerning them.

Inquiry 7.—Salary and Wage Payments.

97. **Net amount required.**—In addition to the instructions contained in paragraphs 55 to 59 for the answer to this inquiry, attention is called to the fact that the net amount paid in wages must be reported. In many branches of the mining industry the mine worker is required to furnish his own explosives, lamp oil, etc. Very often the supplies are procured for him by the operator and the cost is charged to him and deducted from his wages. If the pay roll shows the gross wages, the amount charged for supplies, and the net balance paid, the net amount only should be reported. If the pay roll shows only net wages paid after subtracting the cost of supplies, report the amount so stated. If the pay roll shows only gross wages paid, a separate account being kept by the company's store with each employee of explosives and other supplies sold to miners, the amount so charged should be subtracted from the total gross wages in order to obtain the net wages that is desired.

If the charges for explosives and other supplies appear neither on the pay roll nor elsewhere as a separate account, an estimate of the amount should be obtained from the operator and deducted from gross wages.

The amount charged to miners for explosives, lamp oil, and other supplies and deducted from gross wages in computing the net wages must be separately stated on the line reserved for it next under the total.

98. **Contract miners.**—A contract miner is one who undertakes to mine coal or other mining products at a stipulated price per ton, car, or yard, with the help of men engaged and paid by him, either by the same unit or by the day or week, out of the total amount received by him.

99. **Miners and others compensated by share of product.**—In the Kansas-Missouri lead and zinc mines and in the Colorado silver-lead mines, and possibly in some other cases, there are, in addition to regular wage earners employed by the day or by the task, special classes of labor designated as "leasers," "block lessees," "tributers," etc. Technically, they "lease" from the operator a block in the mine and "pay" a stipulated royalty; in reality all the ore hoisted is usually delivered to the operator and marketed by him or shipped in his name to the sampler or smelter, and the operator retains his royalty or authorizes the ore buyer to withhold the same, and pays to the "lessees" their share of the proceeds. In all cases these workers furnish their own mine supplies. While resembling in form an ordinary mining lease, this is in substance a contract of employment on a share of the product.

This class of miners is seldom, if ever, included in the general pay roll. A separate account will, as a rule, be kept with them, from which their compensation must be ascertained. In some cases the books of a mine owner will show nothing but the royalty obtained by him as an item of income; in that case the compensation of the miners will have to be computed from the rate of royalty received by the operator. For example, if the operating company has credited its income account with $10,000 as royalties, and the rate of royalty received by it is reported in answer to the last question of Inquiry 7 as 20 per cent of the product, then the share received by the mine workers was 80 per cent, i. e., $40,000; in that case $40,000 should be reported in answer to this inquiry as the amount paid to miners compensated by share of product.

Inquiry 9.—Miscellaneous Expenses.

100. **Rent and royalties.**—In addition to the instructions in paragraph 66, attention is called to the fact that the amount paid for rent includes the amount paid for royalties. "Rent" is a fixed amount paid monthly or annually for the use of land, plant, tunnel, and other property. "Royalty" is a stipulated share of the product of the mine usually paid in lieu of rent.

101. **Contract work not included in answer to Inquiry 7.**—The work referred to here is of a more or less casual nature, for example, tunneling, shaft sinking, boring test holes, etc. It is quite distinct from mining proper done by contract miners, which is incident to the regular operation of the mine, and the expense of which must be included in answer to Inquiry 7—Salary and wage payments.

INQUIRY 10.—DEVELOPMENT WORK.

102. **Development work.**—The extension and improvement of the mine usually goes on with the regular mining; sometimes it is not easy to draw the line between development work and mining; for example, where ore is extracted from the ground incidentally to sinking a shaft or boring a tunnel. As a rule, however, a portion of the expenses will be charged on the books to development, the balance representing the expense of operation.

In answer to this inquiry the total amount should be reported which was charged during the year to development.

SUPPLEMENTAL SCHEDULES.

103. **Cooperation with Geological Survey.**—To avoid duplicate inquiries, the Geological Survey, which collects annual statistics of production, and the Bureau of the Census have made arrangements for the use by both offices of the data collected on the supplemental schedules. These supplemental schedules must accompany the General Schedule in the same manner as the supplemental schedules for manufactures accompany the General Schedule for those industries. The arrangement, however, differs from that for manufactures in that the General Schedule for mines and quarries contains no inquiries concerning products. This information is carried on the supplemental schedule, and therefore a supplemental schedule or schedules must accompany every general schedule.

104. **Application of supplemental schedules.**—The following supplemental schedules must be prepared for the minerals indicated by each. The schedule "Miscellaneous mining industries" must accompany the General Schedule for all minerals for which no specific supplemental schedule is provided.

As in the case of manufactures, it will be necessary in some cases to prepare more than one supplemental schedule for the mines and quarries reported on a single general schedule. Some of the supplemental schedules enumerate the by-products usually produced in connection with the principal product, with instructions to report the details of the by-products on the proper supplemental schedule. All of the by-products could not be provided for, and the agent must see that the statistics of production correspond to the data on the General Schedule.

LIST OF SUPPLEMENTAL SCHEDULES.

1. Anthracite coal.
2. Asphalt and bituminous rock.
3. Auriferous and argentiferous deep mines (gold, silver, copper, lead, and zinc).
4. Bituminous coal.
5. Bluestone.
6. Clay. (See par. 94.)
7. Copper smelters. (See par. 114.)
8. Copper refineries. (See par. 115.)
9. Granite.
10. Gypsum and gypsum products.
11. Iron mines.
12. Lake copper mines.
13. Lead smelters. (See par. 114.)
14. Lead refineries. (See par. 115.)
15. Limestone. (See par. 94.)
16. Manganese.
17. Manganiferous iron mines.
18. Marble.
19. Mica.
20. Millstones and chasers.
21. Miscellaneous mining industries.
22. Natural gas. (See par. 105.)
23. Nonargentiferous lead and zinc mines.
24. Petroleum. (See par. 105.)
25. Phosphate rock.
26. Placer and surface mines (gold, silver, and platinum).
27. Pyrite.
28. Quicksilver.
29. Rare metals.
30. Reduction mills.
31. Sandstone.
32. Slate.
33. Talc and soapstone.
34. Trap rock.
35. Zinc smelters. (See par. 114.)

The inquiries on the supplemental schedules are direct and, as a rule, require no explanation, but special attention is called to the following:

105. **Petroleum and natural gas.**—This special general schedule corresponds with the General Schedule for mines and quarries. The inquiries, however, have been worded so as to meet the conditions peculiar to the petroleum and natural gas industries, but they agree so closely with those in the General Schedule for mines and quarries that no special instructions are necessary. In every instance this schedule must be accompanied by the supplemental schedule for petroleum or natural gas. When both products are obtained from the same well or group of wells covered by the special General Schedule, reports must be made on both of the supplemental schedules.

106. **Manganiferous iron mines.**—This schedule applies to mines which produce ore used for its manganese and iron content only. If the ore contains silver in paying quantities, it is to be regarded as a silver ore and should be reported on the supplemental schedule for auriferous and argentiferous deep mines.

107. **Placer and surface mines.**—The gold product of placer mines is not fine gold. The ounces are crude ounces. But the fineness of the gold fluctuates within narrow limits, and the miner, as a rule, knows the average fineness of the gold from his mine. The mint value of an ounce of fine gold is $20.67; the value of a crude ounce varies with the fineness of the gold.

In dredging for gold a record is kept, as a rule, of the quantity of the sand handled. The quantity being determined by the capacity of the dredge, it can easily be calculated, even where no record is kept.

Under other methods of working a commercial company will keep a record of the quantity of material handled or of the average recovery of the gold per cubic yard. The average recovery can be used as a basis for estimating the quantity of material handled.

108. **Auriferous and argentiferous deep mines.**—This schedule applies to mines producing gold and silver (quartz) ore, silver-lead ore, precious-metal-bearing zinc ore, and manganiferous iron ore carrying silver in paying quantities, as well as to western copper mines (not including Lake Superior mines). Manganiferous iron ore used only for its manganese and iron content is to be reported on a supplemental schedule specially provided for the same. Separate schedules are also provided for the Lake Superior copper mines (see par. 113) and for the lead and zinc mines (see par. 112), whose product carries no precious metals in paying quantities.

109. **Auriferous and argentiferous deep mines, products.**—The value of the product of auriferous and argentiferous ore is determined in accordance with the well-established trade custom, in the following manner: The ore is sampled and assayed and the gross price per ton is determined in accordance with the assayed content. Gold, silver, copper, or lead, etc., are paid for at the market rate or refined metal; after the gross price per ton has thus been determined, a stipulated charge per ton is deducted for the treatment of the ore; sometimes a penalty is charged for certain impurities contained in the ore. The freight for carrying the ore from the mine to the works is paid by the buyer and likewise deducted from the gross value of the shipment. The net amount received by the mine operator for the product sold represents the value of the ore at the mine. Very frequently the ore has to be hauled from the mine to the railway station. The cost of haulage is borne by the mine operator and should also be deducted from the gross value of the ore, in case the same is not hauled by the operator's teams. The cost of freight and haulage per ton is usually uniform for each mine and can be accurately stated.

Sometimes the ore is sent to a custom mill in the neighborhood, to be treated on tolls; the milled bullion is returned to the mine operator and sold by him to the mint or to a neighboring bank. In that case the gross value of the bullion is the value of the product; the cost of treatment must then be reported separately.

Smelting ore, which can not be reduced to the metallic state at a mill, is sometimes sent first to a concentrating mill in the neighborhood, to be reduced in bulk, so as to save the cost of freight from the mine to the smelter; the cost of treatment at the concentrating mill should then be reported under Inquiry 4, and the deductions from the gross value of the concentrated product sold to the smelter should be reported under Inquiry 3.

110. **Reduction mills.**—This schedule relates to amalgamation, chlorination, cyaniding, and concentrating mills, whether operated in connection with auriferous and argentiferous deep mines, or independently as custom mills.

No report on this schedule is required for concentrating mills connected with nonargentiferous lead and zinc mines. But a report should be made on this schedule for every custom mill treating nonargentiferous lead and zinc ore.

For method of valuation of ore and concentrate, see paragraph 109.

111. **Auriferous and argentiferous mines combined with mills.**—In case a mine is combined with a mill, it is desirable to obtain a separate report for each on a general schedule and separate reports on the supplemental schedules for auriferous and argentiferous deep mines and for reduction mills. If only one set of books is kept for both the mine and the mill, one combined report may be made on the General Schedule, but separate reports must be made on the supplemental schedules for the mine and the reduction mill.

112. **Nonargentiferous lead and zinc mines.**—This supplemental schedule is to be used for lead and zinc mines of the Mississippi Valley. As a rule, the mine is combined with a concentrating mill of some sort; the schedule accordingly combines inquiries in relation to both mine and mill.

The smaller mines, which have no facilities for milling their ore, have the same treated at a custom mill in the neighborhood; Inquiry 1 is intended to cover such cases. On the other hand, a mill connected with a mine sometimes treats ore from another mine for a stipulated compensation per ton; such cases are covered by Inquiry 2.

Custom mills which do not belong to any mine, but operate exclusively on custom ore, should be reported on the supplemental schedule for reduction mills.

In the principal center of the lead and zinc mining industry the system of tenure of mineral land results in the splitting up of the mining operations among several parties: The mineral land may be owned by one company, the mine developed by another, the mill owned and operated by a third, and the ore mined by a fourth. Usually the product is sold by one party, which retains its share of the value produced (the "royalty") and pays over the balance to the others. In all these cases a full report must be obtained from each party, but care must be taken that each reports as its own product only the actual quantity of ore mined or treated by it.

113. **Lake copper mines.**—The crude product of the mine is locally called "rock." As a rule, every copper mine in the Lake Superior region is equipped with a mill for dressing the rock, i. e., for removing the worthless matter attached to the copper; dressed rock is locally called "mineral." The latter is then treated at a smelter where marketable "lake copper" is produced. If the copper contains silver in paying quantities, it is sent to an electrolytic refinery, where the silver is separated from the copper; the latter is then called "electrolytic copper." The larger mines are equipped with smelters where their product is treated. The smaller operators either sell their mineral to smelters or have it treated for their account at a custom smelter or refinery. If the mineral is sold, its value is determined in the same manner as that of auriferous and argentiferous ores (see par. 109); if it is treated at a custom smelter or refinery and the metallic product is marketed by the operator, the latter is credited with the full (gross) value of the metals produced. The cost of treatment at custom smelters and refineries (haulage, freight, charges for treatment, including selling expenses and commissions) is accounted for separately.

114. **Lead smelters; copper smelters; zinc smelters.**—A report for every smelter must be made on a general schedule for manufactures and on a supplemental schedule for smelters.

In case a smelter is operated in combination with a mine, separate reports are required for the mine and the smelter. If the mine and the smelter are operated jointly and only one set of books is kept covering both, a combined report may be made on the General Schedule for mines and quarries, but separate reports must be made on the supplemental schedules for the mine and the smelter. No items, however, need be reported twice; all inquiries relating to products must be answered fully on the supplemental schedule for the smelter; the supplemental schedule for the mine may be confined to such inquiries only as are not duplicated on the supplemental schedule for the smelter.

115. **Refineries.**—A report for every refinery must be made on a general schedule for manufactures and on a supplemental schedule for copper or lead refineries, as the case may be. Whenever a refinery is combined with a smelter, separate reports must be secured for each. In case only one set of books is kept covering both the smelter and the refinery, a combined report may be made on the General Schedule for manufactures, but separate supplemental schedules must be prepared for each. The inquiries in relation to products and stocks, however, may be omitted from the supplemental schedule for the smelter. (Copper smelters, Inquiries 5 and 7; Lead smelters, Inquiries 4 and 5.)

116. **Printed reports of mining companies.**—In all cases where an annual report of the establishment is printed, a copy of the latest report should be secured and forwarded with the schedules. Copies should also be returned of any other printed matter that will add to the information contained in the schedule.

EXTRACTS FROM AN ACT TO PROVIDE FOR THE THIRTEENTH AND SUBSEQUENT DECENNIAL CENSUSES.

Be it enacted, etc. That a census of the * * * manufactures and mines and quarries of the United States shall be taken by the Director of the Census in the year nineteen hundred and ten and every ten years thereafter. The census herein provided for shall include each state and territory on the mainland of the United States, the District of Columbia, and Alaska, Hawaii, and Porto Rico.

Sec. 8. That the Thirteenth Census shall be restricted to inquiries relating to * * * manufactures and to mines and quarries. * * *

The schedules of inquiries relating to manufactures and to mines and quarries shall include the name and location of each establishment; character of organization, whether individual, cooperative, or other form; character of business or kind of goods manufactured; amount of capital actually invested; number of proprietors, firm members, copartners, stockholders, and officers, and the amount of their salaries; number of employees and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used, and character and number of machines employed.

The census of manufactures and of mines and quarries shall relate to the year ending December thirty-first next preceding the enumeration of population and shall be confined to mines and quarries and manufacturing establishments which were in active operation during all or a portion of that year. The census of manufactures shall furthermore be confined to manufacturing establishments conducted under what is known as the factory system, exclusive of the so-called neighborhood household and hand industries.

The inquiry concerning manufactures shall cover the production of turpentine and rosin, and the report concerning this industry shall show, in addition to the other facts covered by the regular schedule of manufactures, the quantity and quality of turpentine and rosin manufactured and marketed, the sources, methods, and extent of the industry.

Whenever he shall deem it expedient, the Director of the Census may charge the collection of these statistics upon special agents or upon detailed employees, to be employed without respect to locality.

The form and subdivision of inquiries necessary to secure the information under the foregoing topics shall be determined by the Director of the Census.

SEC. 22. That any supervisor, supervisor's clerk, enumerator, interpreter, special agent, or other employee, who, having taken and subscribed the oath of office required by this act, shall, without justifiable cause, neglect or refuse to perform the duties enjoined on him by this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding five hundred dollars; or if he shall, without the authority of the Director of the Census, publish or communicate any information coming into his possession by reason of his employment under the provisions of this act, or the act to provide for a permanent Census Office, or acts amendatory thereof or supplemental thereto, he shall be guilty of a misdemeanor and shall upon conviction thereof be fined not to exceed one thousand dollars, or be imprisoned not to exceed two years, or both so fined and imprisoned, in the discretion of the court; or if he shall willfully and knowingly swear to or affirm falsely he shall be deemed guilty of perjury, and upon conviction thereof shall be imprisoned not exceeding five years and be fined not exceeding two thousand dollars; or if he shall willfully and knowingly make a false certificate or a fictitious return he shall be guilty of a misdemeanor, and upon conviction of either of the last-named offenses he shall be fined not exceeding two thousand dollars and be imprisoned not exceeding five years; or if any person who is or has been an enumerator shall knowingly or willfully furnish or cause to be furnished, directly or indirectly, to the Director of the Census or to any supervisor of the census any false statement or false information with reference to any inquiry for which he was authorized and required to collect information he shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding two thousand dollars and be imprisoned not exceeding five years.

* * * * * * *

SEC. 24. And it shall be the duty of every owner, president, treasurer, secretary, director, or other officer or agent of any manufacturing establishment, mine, quarry, or other establishment of productive industry, whether conducted as a corporation, firm, limited liability company, or by private individuals, when requested by the Director of the Census or by any supervisor, enumerator, special agent, or other employee of the Census Office acting under the instructions of the said director, to answer completely and correctly to the best of his knowledge all questions on any census schedule applying to such establishment; and any owner, president, secretary, director, or other officer or agent of any manufacturing establishment, mine, quarry, or other establishment of productive industry, who under the conditions hereinbefore stated shall refuse or willfully neglect to answer any of these questions, or shall willfully give answers that are false, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding ten thousand dollars or imprisoned for a period not exceeding one year, or both so fined and imprisoned, at the discretion of the court. The provisions of this section shall also apply to the collection of the information required and authorized by the act entitled "An act to provide for a permanent Census Office," and by acts amendatory thereof or supplemental thereto.

SEC. 25. That the information furnished under the provisions of the next preceding section shall be used only for the statistical purposes for which it is supplied. No publication shall be made by the Census Office whereby the data furnished by any particular establishment can be identified, nor shall the Director of the Census permit anyone other than the sworn employees of the Census Office to examine the individual reports.

SEC. 26. That all fines and penalties imposed by this act may be enforced by indictment or information in any court of competent jurisdiction.

APPENDIX C.

INSTRUCTIONS FOR EDITING AND REVISING THE SCHEDULES FOR MINES, QUARRIES, AND WELLS.

The reports from the mines, quarries, petroleum and gas wells are prepared either by a representative of the establishment or by an agent of the Bureau of the Census in conformity with information furnished by such representative. As a rule, therefore, they should be accepted as showing the condition of the business for the census year of the establishment reporting. The bureau is not justified in making any changes in values or quantities that will affect the general results, except in cases of manifest error. The revision of the reports will be confined, therefore, to harmonizing the answers to the several questions and detecting and correcting errors due to misunderstanding the questions, to the insertion of wrong figures, or to the misstatement of facts.

It is important, in order that no point in the schedule be overlooked, that exact and uniform methods be followed in editing. The several questions in the schedule should be taken up in regular order, each being considered by itself and in connection with information given under questions that have more or less bearing upon it and with which it should be consistent. The instructions in the schedule and in the book of instructions to special agents must be studied and their application to each question fully understood. In addition to these the following rules and suggestions must be observed:

All changes must be made neatly and plainly in red ink. Make plain all indistinct figures. *If a correction is necessary in one or two figures of a number, rewrite all of the figures of the number.* Be careful to have all corrections in the proper spaces, to avoid confusion and error in tabulation.

Cents and fractions should in all cases be eliminated; follow the office rule of adding 1 if the fraction is more than one-half or dropping the fraction if less than one-half.

The totals given must be verified by the addition of the several items which should properly be included therein. If the totals are not entered they should be inserted in red ink after all corrections have been made in the items.

Each schedule should be first examined to see that the mining enterprise comes within the scope of the census investigation. (See pars. 91–93, "Instructions to Special Agents.")

The following are some of the principal points that should be considered in editing the answer to each inquiry:

GENERAL SCHEDULE.

INQUIRY 1.

The location of the mine, quarry, or well must be given in full, both on the general and on the supplemental schedule, and the description on both schedules must agree. A report may cover operations in more than one county; no segregation by counties is required. If one report is made for the operations of the mining company in more than one state, the schedule should be submitted to the expert special agent on mining.

Period covered by the report.—The report must cover all the operations during a full year of 12 months, namely, either the calendar year or the fiscal year of the establishment. If the mine was idle during a portion of the year, the period of idleness will be indicated by the number of days in operation reported under Inquiry 2 and by the answer to Inquiry 6.

If the answer to Inquiry 1 accounts for less than a full year and the answer to Inquiry 6 fails to account for a full year, it is possible that the mine changed hands during the year 1909; in all such cases the agent should be instructed to secure a report for the portion, if any, of the year 1909 the property was operated by the predecessor of the present owner.

Character of organization.—*A general partnership* is one in which every member has a voice in the management of the business.

A limited partnership is one in which, besides the general partners having a voice in the management of the business, there are special partners who merely have invested a limited amount of money in the business, but have no voice in its management, and are liable for the debts of the partnership only to the extent of their investment. A limited partnership is required by law to file, upon its organization, a certificate with the proper authority, in like manner as a corporation; usually the word "Limited" is added to the firm name. Whenever a limited partnership is reported the schedule should be carefully scrutinized, and in doubtful cases submitted to the expert special agent on mining.

A cooperative association, or society, is a partnership of a number of partners who contribute their manual labor, as well as their capital, to the common enterprise. It is usually governed like a corporation, by elective officers. Cooperative associations are an unusual form of business organization in the United States; it is therefore necessary to scrutinize very carefully every schedule where this form of organization is reported; in doubtful cases it should be submitted to the expert special agent on mining.

For the purpose of tabulation, the form of organization should be indicated on the left-hand margin of the schedule, opposite the answer, by one of the following words: Individual, Firm, Limited, Incorporated, Cooperative, or Other.

The number of proprietors and partnership members, or the number of stockholders, should be consistent with the character of organization.

If the number of proprietors regularly performing manual labor is reported, see that they are not included among the number of wage earners under Inquiries 5 and 6, and that the amount received by them is not included under wages in Inquiry 7. There are cases where no labor other than that of the proprietors is applied to the mine; in such cases no wage earners should be shown under Inquiries 5 and 6, and no payments to wage earners under Inquiry 7. The words "No hired labor" should be entered on the margin of such schedules to the right of the number of proprietors performing manual labor.

These rules do not apply to cooperative associations, which are similar in this respect to corporations: A member of a cooperative association who works for the association is like a stockholder of a corporation who is hired to work for the corporation.

INQUIRY 2.

Time in operation is variously shown on the title page, under Inquiry 1, "Period covered by this report," and under Inquiries 2 and 6. The answers to these three inquiries should be consistent.

INQUIRY 3.

Mineral and other lands.—If the answer to Inquiry 1 shows that the operator is not the owner of the mine, the answer under Inquiry 3 must show the number of acres leased.

INQUIRY 4.

Only incorporated companies should report salaried officers of corporations. Examine Inquiries 4, 5, and 6 for duplication.

INQUIRY 6.

The number of employees reported here as of the 15th day of each month generally can be accepted as the average number employed during the month, and the amount of labor shown should be consistent with the amount paid wage earners under Inquiry 7, and, in a general way, with the product shown on the supplemental schedule.

Note that the term "Employed otherwise, as by contractor, etc.," is intended to include also wage earners employed directly by the operator, whenever the compensation of such employees is based on a share of the product, as well as the wage earners employed by contractors. In the former case, the payment for the labor should be shown under Inquiry 7, on line "Miners and others compensated by a share of the product," and in the latter case as contract work under Inquiry 9. Thus, wherever there is shown some labor under this designation, there should be shown a payment under either of these items. No schedule need, however, be rejected for failure to report the number of wage earners "Employed otherwise, as by contractors, etc."

INQUIRY 7.

No salaries should be reported for salaried officers of corporations if the establishment is not incorporated.

This inquiry should be consistent with information reported under Inquiries 4, 5, and 6. If "Salaried officers of corporations," "Superintendents and managers," "Clerks, stenographers, and other salaried employees," are reported under Inquiry 4, their salaries should be reported on the respective line under Inquiry 7. If wage earners are shown under Inquiry 5 or 6 to have been "Employed directly by operator," their wages must be reported on the line reserved for "Wage earners, paid by unit of time, ton, car, foot, or yard."

Divide the total amount of wages reported under Inquiry 7 on the fourth line by the sum of the wage earners employed on the 15th of each month, as reported under Inquiry 6. This will give approximately the average monthly earnings per employee, which should be entered under Inquiry 7, on the right margin next to line four.

Contract miners and contract work.—No payments for contract work, where the production of the mineral is the subject of the contract, should be included under contract work (Inquiry 9), but should always be entered under Inquiry 7, line "Wage earners paid by unit of time, etc."

Under "Amount charged to miners, quarrymen, and stonecutters for explosives, lamp oil, and blacksmithing charges, etc.," do not include amounts charged at the company's store for supplies other than those connected with the actual mining operations. There should not be included under this inquiry any charges for groceries, clothing, etc. All amounts shown here should also be included in "Total cost of all materials (other than fuel) and supplies used during the year," shown in the first item of Inquiry 8.

Rate of royalty by operator.—Note that under Inquiry 7 only the rate of royalty is to be reported where the miners and other employees are to be compensated by a share of the product. The amount of this royalty is not to be shown on either the general or the supplemental schedule. The supplemental schedule of mines and quarries so operated should show the total amount and value of the product, just the same as if the miners were paid a specified wage, and Inquiry 7 of the general schedule, on line "Miners and others compensated by a share of the product" should show the total value of that part of the product which was the share of the miners as a payment by the operator for salaries and wages.

"Royalty," as used in this connection, should not be confused with "Rents and royalties" *paid by* the operator and shown under Inquiry 9.

INQUIRY 8.

The first item of this inquiry should include the cost of all materials except fuel.

Divide the cost of fuel and rent of power, reported under Inquiry 8, by the total number of horsepower, owned and rented, as reported under Inquiry 11. This will give the average cost of fuel and rent of power per horsepower, which should be entered on the right margin, next to line 2, under Inquiry 8.

INQUIRY 9.

If the mine or quarry, or any part of it, is reported as rented under Inquiry 1, the amount paid for rent or royalty must be shown, except where the operations consisted only, or mainly, in development work, which will appear from the supplemental schedule.

Ascertain total operating expenses by combining the expenses shown under Inquiries 7, 8, and 9, and enter this amount on the left-hand margin of the page opposite Inquiry 9, as "Total operating expenses." See that "Loss" is written on the right-hand corner of the schedule when operating expenses exceed the value of the product. If the schedule shows a loss without any explanation under "Remarks," it must be returned for verification. Do not pass any schedule as correct which shows a loss in the year's operation unless an explanation of the loss is given by the agent who made out the schedule. (See Instructions to special agents, par. 81).

INQUIRY 10.

Development work.—The total cost of all development work during the year must not exceed the total expenses under Inquiries 7, 8, and 9, except where it appears from the answer to Inquiry 1 that manual labor was performed by the proprietors. It not infrequently occurs, however, that where the operations of the mine are confined to development work only a portion of the expense is charged to the same, while such expenses as salaries, rent of offices, insurance, etc., are not charged to development on the books of the operator. In such cases the schedule need not be returned for correction by reason of this apparent loss.

CLASSIFICATION FOR TABULATION.

All schedules shall be divided into two classes, those showing production and those showing development work only.

The schedules showing production shall be further classified as follows:

Class A.—All schedules showing an excess of value of products over all expenditures, including expenses of operation and outlays for development work.

Class B.—All schedules showing expenditures greater than the value of products and no expenses for development work.

The Instructions to Special Agents (par. 81) require the word "Correct" to be written under the total value of the product, where the same falls short of the expenses, and a memorandum to be made explaining the conditions which caused the loss.

Class C.—All schedules showing an excess of expenditures over value of products, but stating that a part of the expenditure was for development work. No attempt need be made on account of the uncertainty of the expenditure for development work, to determine whether the strictly operating expenses exceeded the value of products or not.

In those mines where no hired labor was employed, or where a part of the manual labor was performed by the proprietors but hired labor was also employed, if the cost of development work reported under Inquiry 10 exceeds the value of the product, although the latter is in excess of the expenses reported under Inquiries 7, 8, and 9, the schedule should be classified as belonging to Class C.

SUPPLEMENTAL SCHEDULES.

COAL MINES.

Many coal-mining schedules are received showing an extremely low "Value of coal at mine," the total value frequently being less than the total expenses. Apparently, in such cases, the "Selling value at mine" has been underestimated. Special agents are instructed to obtain the "Total selling value of coal at mine" by the following method: They must ascertain from the operator's books the *total* amount received for coal shipped to market points and deduct from that amount the freight, haulage, and commission charges as shown on the books; to this must be added the amount received for coal disposed of locally; the total will represent the "Total selling value of coal at mine." This computation should be shown in the space reserved for "Remarks."

In Inquiry 1 of the anthracite-coal schedule, and in Inquiry 2 of the bituminous-coal schedule, the "Total selling value of coal at mine" should include the value of coal "Used at mine for steam and heat," when the operator's books include this item in the total value of the year's productions. If the operator's books do not include it, it should be omitted from the total selling value, and the words, "Not included in total selling value" should be written after the words (in Inquiry 1 or 2) "Used at mine for steam and heat."

Care should be exercised to make this item (Inquiry 1 or 2) consistent with Inquiry 8 of the general schedule. If the coal used at the mine is included in the total selling value, Inquiry 8 of the general schedule should include the value of it under "Cost of fuel and rent of power," but if not so included the value should not be given under Inquiry 8.

Anthracite coal: Inquiry 2.—The total quantity loaded at mines for shipment must agree with "Loaded at mines for shipment," under Inquiry 1.

Inquiry 5.—The total quantity shipped, reported under this inquiry, need not agree with the total quantity loaded for shipment, which is shown under Inquiries 1 and 2.

Bituminous coal: Inquiry 6.—The total quantity shipped, reported under this inquiry, need not agree with the total quantity loaded for shipment, which is shown under Inquiry 1.

IRON.

In addition to the classification previously given the iron mine schedules should be further classified, as follows:

I. Mines with blast furnaces adjoining.

II. Mines with blast furnaces at a distance.

III. Mines without blast furnaces. The division of blast furnaces into those adjoining and at a distance shall be determined in the following manner:

The iron mine reports shall be checked with the manufacturing reports for blast furnaces and in all cases where the same company owns both mines and blast furnaces the location of the furnace shall be noted on the supplemental sheet of the mine report and the distance between the mine and furnace be determined by consulting atlas.

If five miles or under they shall be classed "Blast furnace adjoining;" if over five miles, they shall be classed "Blast furnaces at a distance." Follow this plan except where it is stated either on the schedule or in the Iron and Steel Directory that the mines and furnaces are, for example, 10 miles distant but all *located* on property owned by the company. Consider these as blast furnaces adjoining.

PETROLEUM AND NATURAL GAS.

A special general schedule is provided for petroleum and natural gas wells, which is substantially similar to the general schedule for mines and quarries. Instructions for editing this schedule were as follows:

INQUIRY 1.

Compare the title page of the general schedule with the title page of the supplemental schedule "Name of operator." "If operator is not owner of wells, give name and address of owner," "State," "County," and "Post Office address of general office"—should agree.

INQUIRY 2.

Number of days in operation.—Where the number of days in operation under Inquiry 2 is given as 365, and the number of days per week as six, allow each entry to stand as reported.

INQUIRY 8.

Gas purchased.—The amount paid for gas purchased from other companies should be entered as an operating expense under "Cost of materials" on the general schedule.

The estimated value of gas produced at *petroleum wells* and used in operation of the oil plant should not be entered as an operating expense on the general schedule under "Cost of fuel and rent of power."

INQUIRY 9.

Taxes.—In case of wells operated by owners, the amount of taxes paid on the entire farm on which the well is drilled, is liable to be reported as operating expense. In such cases the amount of this tax should be cut out. In like manner the total area of the farm should not be entered as gas lands.

PETROLEUM, SUPPLEMENTAL SCHEDULE.

INQUIRY 1.

If a portion of the oil is placed to the credit of the landowner, its value must be included under "Rent and royalties," under Inquiry 9, on the general schedule; but the latter amount may, in addition thereto, include a flat rental paid for the lease. It sometimes occurs that the entire product is credited to the operator and a cash rental is paid by the latter to the owner; in that case the rental will be shown only on the general schedule, under "Miscellaneous expenses."

Fuel.—If gas was sold in addition to petroleum, a supplemental schedule for natural gas must accompany the report.

No attention need be paid to "Total initial production of oil, etc."

Before passing a schedule as correct, compare the total product for the year ("Total deliveries" plus "Crude oil held in tankage December 31, 1909," minus "Crude oil held in tankage January 1, 1909,") with the total operating expenses (general schedule, the sum of Inquiries 7, 8, and 9.) The product should be greater than the expenses unless the supplemental shows that new wells were drilled during the year.

NATURAL GAS, SUPPLEMENTAL SCHEDULE.

Gas wells operated by owners.—Gas wells with small production, which is used by the owner of the well and possibly one or two neighbors, may be operated without any hired labor and very little labor by the proprietor. These schedules can be accepted as correct without showing either hired labor or without the proprietor regularly performing manual labor in connection with the well.

INQUIRY 1.

To be reported in M cubic feet.—Note that the schedule calls for the report to be made in M cubic feet. Ascertain from the value of the gas and other items which have a bearing on the same whether or not this has been done, and if not, reduce the quantity to M cubic feet.

(*a*) The total quantity of gas produced, together with the total quantity purchased, must be equal to the total quantity supplied for consumption.

(*b*) The total quantity supplied must be equal to the sum of the quantities supplied within the state and in other states.

(c) The number of consumers and the total quantity sold to other gas producers or distributing companies must agree with the number of consumers and the total quantity of gas supplied for consumption in 1909 to other gas producers or distributing companies.

INQUIRY 3.

Oil and gas land controlled by operator.—In answer to question "Number of acres held in fee," should be reported the number of acres of oil land or gas land or combined oil and gas land owned by the operator; for held "under lease" should be reported all such land which is leased by the operator; for "gas rights" and "oil rights" should be reported the number of acres of oil or gas lands upon which the operator has a right to drill for oil or gas but does not control the land itself.

Amounts reported for these last two items should always be in addition to that held "in fee" or "under lease," and never be a duplication of them.

Where both oil and gas rights are owned on the same acreage, the acreage should be reported but once and it should be treated as combined oil and gas rights.

DUPLICATIONS.

Where the same establishment produces both oil and gas from the same well or group of wells, the report should consist of one general schedule and two supplemental schedules—one for petroleum and one for gas.

Editors should examine such reports carefully to detect the following duplications which are likely to occur:

(1) On the petroleum supplemental, under inquiries "Gas produced and used in operation of the plant," and "Gas produced and sold in 1909," there may be reported the same gas as is shown on the supplemental schedule for gas. In like manner on the gas supplemental schedule under inquiry "Petroleum produced at your wells and sold in 1909," there may be reported the same petroleum that is reported on the petroleum supplemental.

(2) The number of wells producing both oil and gas are liable to be reported on both the supplementals for petroleum and gas.

(3) The number of acres of oil and gas lands controlled by the operator may also be reported on both supplemental schedules.

In case of duplication as mentioned in (1), cut out the gas reported on the petroleum supplemental schedule and the petroleum reported on the gas supplemental.

Where the number of wells, as mentioned in (2), or the area of the oil land as mentioned in (3) are duplicated, cut out the number of wells and the acres of land on the *gas* supplemental.

◆

Digitized by Microsoft®